FCC&IC Radio Test Report

FCC ID: QT7LENOVOF800

IC: 11515A-LENOVOF800

This report concerns (check one): ■ **Original Grant** □ **Class II Change**

Issued Date	:	Nov. 21, 2013
Project No.	:	1310C147
Equipment	:	Multi-mode WiFi Storage
Model Name	:	Lenovo F800
Applicant	:	Power7 Technology (Dong Guan) Co., Ltd
Address	:	No.28 BinJiang Blvd Shishuikou Village, Qiaotou Town, Dongguan City, Guang Dong Province P.R. China

Tested by: Neutron Engineering Inc. EMC Laboratory

Date of Receipt: Oct. 23, 2013

Date of Test: Oct. 23, 2013 ~ Nov. 20, 2013

Testing Engineer : David Mao
(David Mao)

Technical Manager : Leo Hung
(Leo Hung)

Authorized Signatory : Steven Lu
(Steven Lu)

Neutron Engineering Inc.
No.3,Jinshagang 1st Road, ShiXia,
Dalang Town, Dong Guan, China.
TEL: 0769-8318-3000
FAX: 0769-8319-6000

Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

Neutron's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **Neutron** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **Neutron** issued reports.

Neutron's reports must not be used by the client to claim product endorsement by the authorities or any agency of the Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **Neutron-self**, extracts from the test report shall not be reproduced except in full with **Neutron**'s authorized written approval.

Neutron's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents Page

1 . CERTIFICATION 6
2 . SUMMARY OF TEST RESULTS 7
2.1 TEST FACILITY 8
2.2 MEASUREMENT UNCERTAINTY 8
3 . GENERAL INFORMATION 9
3.1 GENERAL DESCRIPTION OF EUT 9
3.2 DESCRIPTION OF TEST MODES 11
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING 12
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 13
3.5 DESCRIPTION OF SUPPORT UNITS 15
4 . EMC EMISSION TEST 16
4.1 CONDUCTED EMISSION MEASUREMENT 16
4.1.1 POWER LINE CONDUCTED EMISSION LIMITS 16
4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING 16
4.1.3 TEST PROCEDURE 17
4.1.4 DEVIATION FROM TEST STANDARD 17
4.1.5 TEST SETUP 17
4.1.6 EUT OPERATING CONDITIONS 17
4.1.7 TEST RESULTS 18
4.2 RADIATED EMISSION MEASUREMENT 21
4.2.1 RADIATED EMISSION LIMITS 21
4.2.2 MEASUREMENT INSTRUMENTS LIST ANS SETTING 22
4.2.3 TEST PROCEDURE 22
4.2.4 DEVIATION FROM TEST STANDARD 22
4.2.5 TEST SETUP 23
4.2.6 EUT OPERATING CONDITIONS 24
4.2.7 TEST RESULTS (BETWEEN 30 – 1000 MHZ) 26
4.2.8 TEST RESULTS (ABOVE 1000 MHZ) 39
5 . BANDWIDTH TEST 87
5.1 APPLIED PROCEDURES / LIMIT 87
5.1.1 MEASUREMENT INSTRUMENTS LIST 87
5.1.2 TEST PROCEDURE 87
5.1.3 DEVIATION FROM STANDARD 87
5.1.4 TEST SETUP 87
5.1.5 EUT OPERATION CONDITIONS 87
5.1.6 TEST RESULTS 88
6 . MAXIMUM OUTPUT POWER TEST 100

Table of Contents Page

6.1 APPLIED PROCEDURES / LIMIT 100
6.1.1 MEASUREMENT INSTRUMENTS LIST 100
6.1.2 TEST PROCEDURE 100
6.1.3 DEVIATION FROM STANDARD 100
6.1.4 TEST SETUP 100
6.1.5 EUT OPERATION CONDITIONS 100
6.1.6 TEST RESULTS 101

7 . ANTENNA CONDUCTED SPURIOUS EMISSION 104

7.1 APPLIED PROCEDURES / LIMIT 104
7.1.1 MEASUREMENT INSTRUMENTS LIST 104
7.1.2 TEST PROCEDURE 104
7.1.3 DEVIATION FROM STANDARD 104
7.1.4 TEST SETUP 104
7.1.5 EUT OPERATION CONDITIONS 104
7.1.6 TEST RESULTS 105

8 . POWER SPECTRAL DENSITY TEST 135

8.1 APPLIED PROCEDURES / LIMIT 135
8.1.1 MEASUREMENT INSTRUMENTS LIST 135
8.1.2 TEST PROCEDURE 135
8.1.3 DEVIATION FROM STANDARD 135
8.1.4 TEST SETUP 135
8.1.5 EUT OPERATION CONDITIONS 135
8.1.6 TEST RESULTS 136

9 . EUT TEST PHOTO 150

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
NEI-FICP-1-1310C147	Original Issue.	Nov. 21, 2013

1. CERTIFICATION

Equipment	:	Multi-mode WiFi Storage
Brand Name	:	Lenovo
Model Name	:	Lenovo F800
Applicant	:	Power7 Technology (Dong Guan) Co., Ltd
Manufacture	:	LENOVO(BEIJING)LIMITED
Address	:	No.6 Chuang Ye Road Shangdi Information Industry Base, Haidian District, Beijing, China
Factory Address	:	Power7 Technology (Dong Guan) Co., Ltd No.28 BinJiang Blvd Shishuikou Village, Qiaotou Town, Dongguan City, Guang Dong Province P.R. China
Date of Test	:	Oct. 23, 2013 ~ Nov. 20, 2013
Test Item	:	ENGINEERING SAMPLE
Standard(s)	:	FCC Part15(2012), Subpart C(15.247) / ANSI C63.4-2009 Canada RSS-210:2010 RSS-GEN Issue 3, Dec 2010

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FICP-1-1310C147) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C **Canada RSS-210:2010; RSS-GEN Issue 3, Dec 2010**				
Standard(s) Section		Test Item	Judgment	Remark
15.207	RSS-GEN 7.2.2	Conducted Emission	PASS	
15.247(d)	RSS-210 Annex 8 (A8.5)	Antenna conducted Spurious Emission	PASS	
15.247(a)(2)	RSS-210 Annex 8 (A8.2(a))	6dB Bandwidth	PASS	
15.247(b)(3)	RSS-210 Annex 8 (A8.4(4))	Peak Output Power	PASS	
15.247(e)	RSS-210 Annex 8 (A8.2(b))	Power Spectral Density	PASS	
15.203	-	Antenna Requirement	PASS	
15.209/15.205	RSS-210 Annex 8 (A8.5)	Transmitter Radiated Emissions	PASS	
-	RSS-Gen 7.2.3	Receiver Radiated Emissions	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this test report.

(2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r01 (Measurement Guidelines of DTS)

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792
Neutron's test firm number for FCC: 319330
Neutron's test firm number for IC: 4428B-1

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Multi-mode WiFi Storage</td></tr>
<tr><td>Brand Name</td><td>Lenovo</td></tr>
<tr><td>Model Name</td><td>Lenovo F800</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>
<table>
<tr><td>Operation Frequency</td><td>2412~2462 MHz</td></tr>
<tr><td>Modulation Technology</td><td>802.11b:DSSS
802.11g:OFDM
802.11n:OFDM</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>802.11b: 11/5.5/2/1 Mbps
802.11g:
54/48/36/24/18/12/9/6 Mbps
802.11n up to 300 Mbps</td></tr>
<tr><td>Number Of Channel</td><td>11 CH, Please see note 2.(Page 10)</td></tr>
<tr><td>Antenna Designation</td><td rowspan="2">Please see note 3.(Page 10)</td></tr>
<tr><td>Antenna Gain(Peak)</td></tr>
<tr><td>Peak Output Power (Max.)</td><td>802.11b: 24.37 dBm
802.11g: 24.28 dBm
802.11n(20MHz):27.35 dBm
802.11n(40MHz):27.41 dBm</td></tr>
<tr><td>AVG Output Power (Max.)</td><td>802.11b: 14.01 dBm
802.11g: 14.02 dBm
802.11n(20MHz):16.59 dBm
802.11n(40MHz):16.70 dBm</td></tr>
</table>
More details of EUT technical specification, please refer to the User's Manual.
</td></tr>
<tr><td>Power Source</td><td>#1 Supplied from host system for charging.
#2 Supplied from Rechargeable Li-ion Battery.
Battery model: 465464P</td></tr>
<tr><td>Power Rating</td><td>#1 I/P: AC 120V/60Hz O/P: DC 5V 0.5A~1.5A
#2 DC 3.7V 4000mAh</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2. CH 01 – CH 11 for 802.11b, 802.11g, 802.11n(20MHz)
CH 03 – CH 09 for 802.11n(40MHz)

Channel List

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
0	N/A	N/A	Printed Antenna	N/A	2	TX/RX
1	N/A	N/A	Printed Antenna	N/A	2	TX/RX

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

4.

Operating Mode / TX Mode	1TX	2TX
802.11b	V (ANT 0 or ANT 1)	-
802.11g	V (ANT 0 or ANT 1)	-
802.11n(20MHz)	-	V (ANT 0 + ANT 1
802.11n(40MHz)	-	V (ANT 0 + ANT 1)

5.

HDD Brand: Seagate and WD				
Internal HDD	RPM	Interface	Capacity	Size
WD5000LPVT	5400	SATA	500GB	2.5"
WD5000LPCX	5400	SATA	500GB	2.5"
WD10JPVX	5400	SATA	1TB	2.5"
ST1000LM024	5400	SATA	1TB	2.5"
ST500LT012	5400	SATA	500GB	2.5"

Note: WD10JPVX is found to be the worst case and recorded.

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09
Mode 5	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode	Description
Mode 5	TX Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

Note:

(1) The measurements are performed at the high, middle, low available channels.

(2) 802.11b mode: DBPSK (1Mbps)
802.11g mode: OFDM (6Mbps)
802.11n HT20 mode : BPSK (13Mbps)
802.11n HT40 mode : BPSK (27Mbps)
For radiated emission tests, the highest output powers were set for final test.

(3)The EUT was pre-tested on positioned of each 3 axis. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

(4) For radiated below 1G test, the 802.11b mode is found to be the worst case and recorded.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

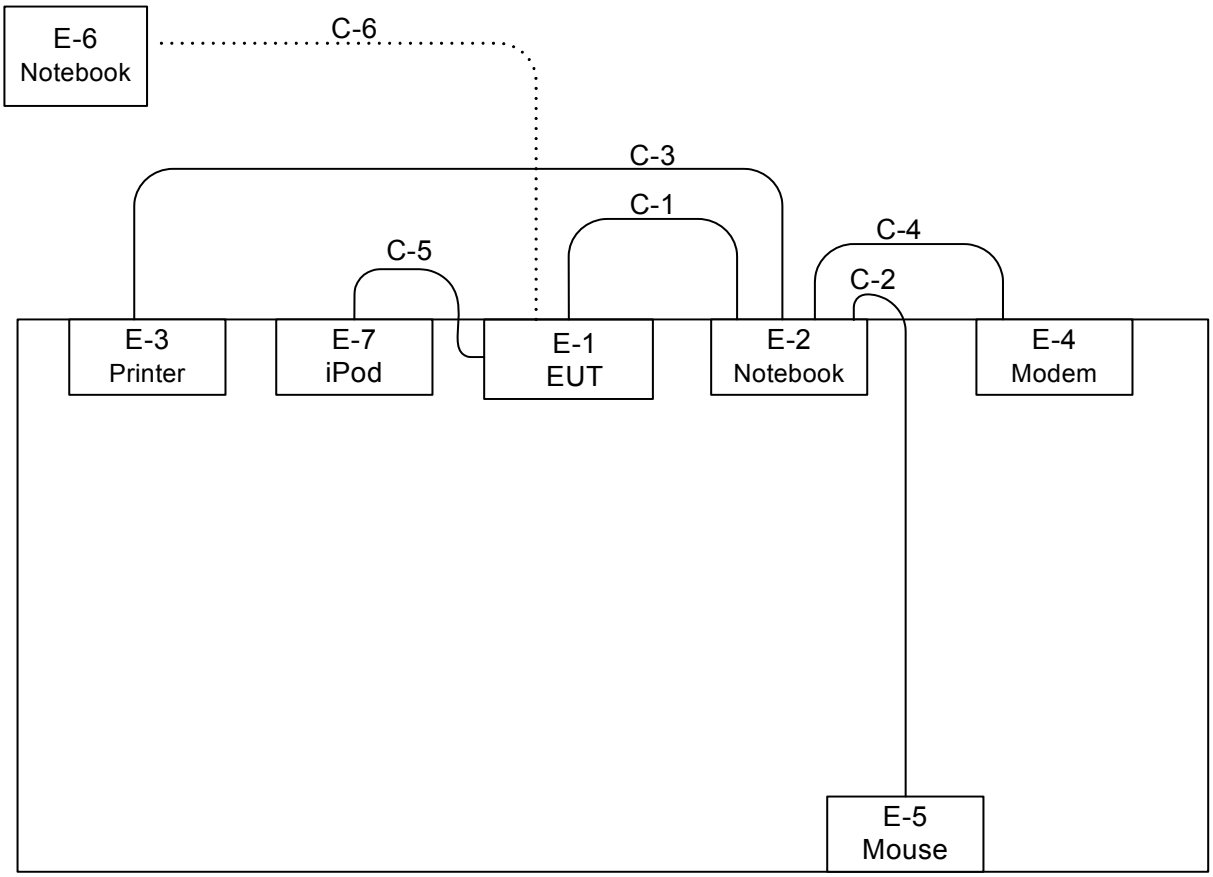
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

Test software version	MT7620QA		
Frequency	**2412 MHz**	**2437 MHz**	**2462 MHz**
IEEE 802.11b DSSS	13	13	12
IEEE 802.11g OFDM	11	11	10

Test software version	MT7620QA		
Frequency (MHz)	**2412 MHz**	**2437 MHz**	**2462 MHz**
IEEE 802.11n (20MHz)	12	12	11
Frequency (MHz)	**2422 MHz**	**2437 MHz**	**2452 MHz**
IEEE 802.11n (40MHz)	15	14	14

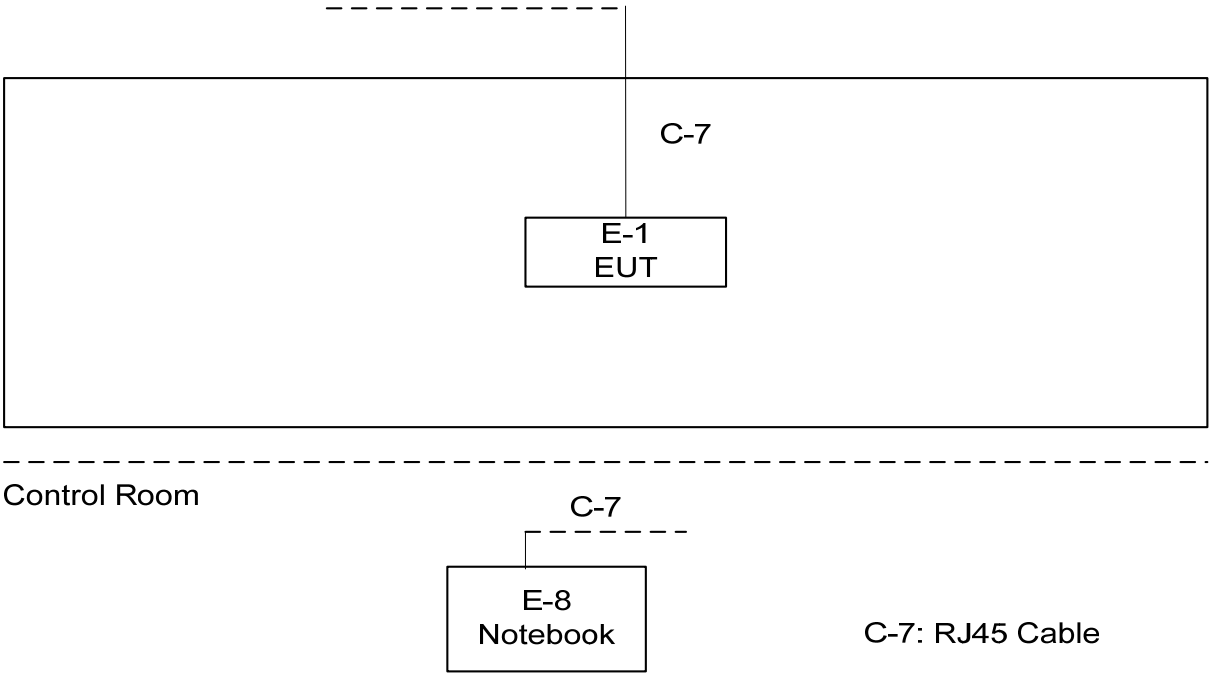
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted TX Mode:



C-1 USB Cable
C-2 USB Cable
C-3 Parallel Cable
C-4 RS232 Cable
C-5 USB Cable
C-6 RJ45

Radiated TX Mode:



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID/IC	Series No.	Note
E-1	Multi-mode WiFi Storage	Lenovo	Lenovo F800	QT7LENOVOF800/ 11515A-LENOVOF800	N/A	EUT
E-2	Notebook	Lenovo	E46L	DOC	EB22953787	
E-3	Printer	Lenovo	M630	DOC	SP00335371	
E-4	Modem	Lenovo	LEM56SP	DOC	004000137896	
E-5	USB Mouse	Lenovo	MO28UOL	DOC	23-122591	
E-6	Notebook	Lenovo	E46L	DOC	EB22953770	
E-7	iPod nano(8G)	Apple	A1320	DOC	YM945ZGJ72A	
E-8	Notebook	Lenovo	E46L	DOC	EB22953770	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	NO	0.45m	
C-2	YES	NO	1.8m	
C-3	YES	NO	1.8m	
C-4	YES	NO	1.8m	
C-5	YES	NO	1m	
C-6	NO	NO	15m	
C-7	NO	NO	10m	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in m in『Length』column.

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Apr. 25, 2014
2	LISN	R&S	ENV216	100087	Nov.09, 2014
3	Test Cable	N/A	C_17	N/A	Mar.15, 2014
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	Apr. 25, 2014
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Apr. 25, 2014

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

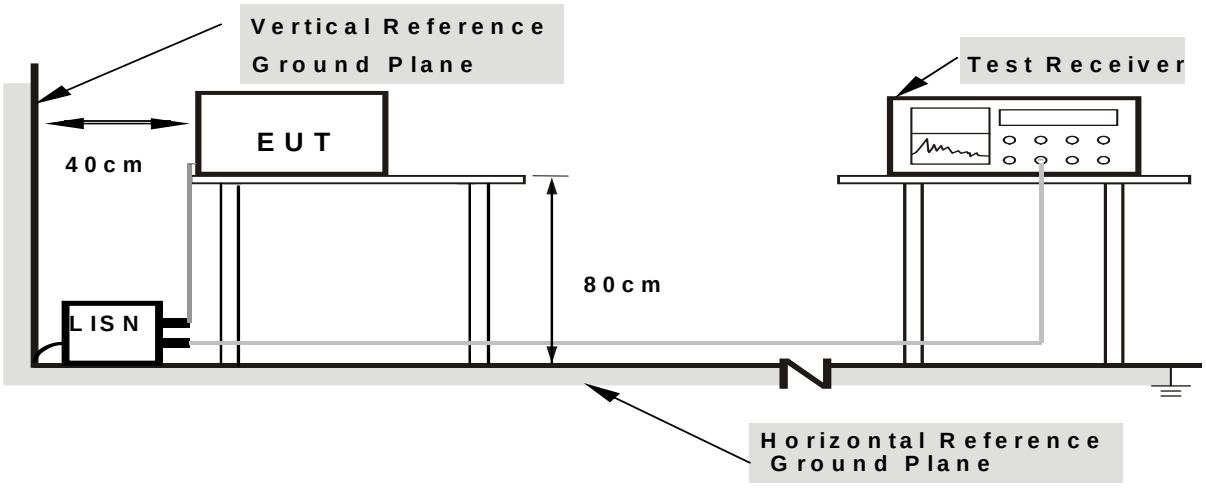
4.1.3 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

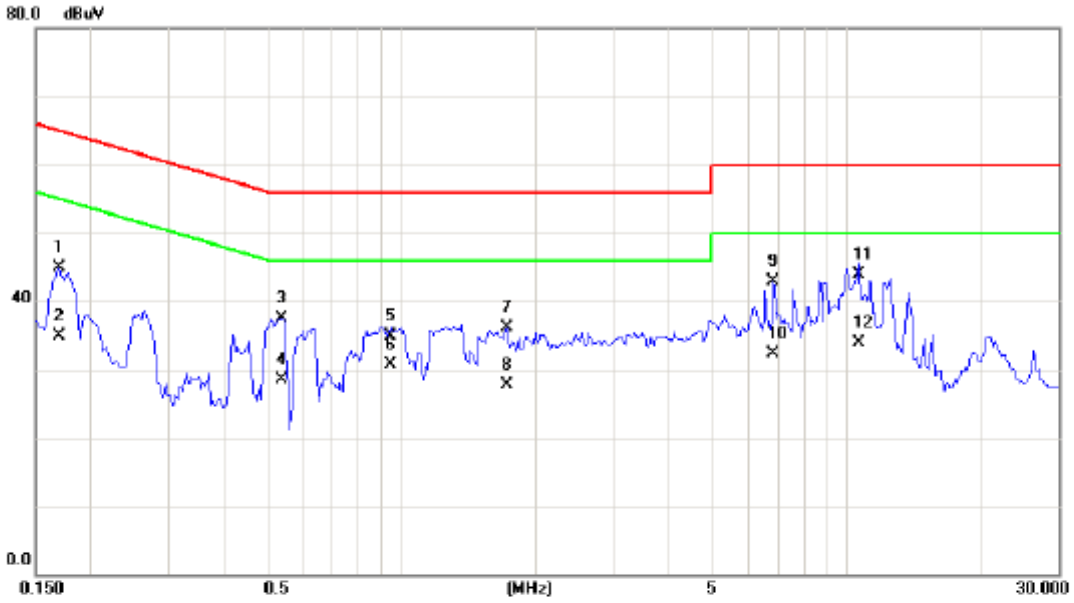
4.1.7 TEST RESULTS

Remark:

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform.In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

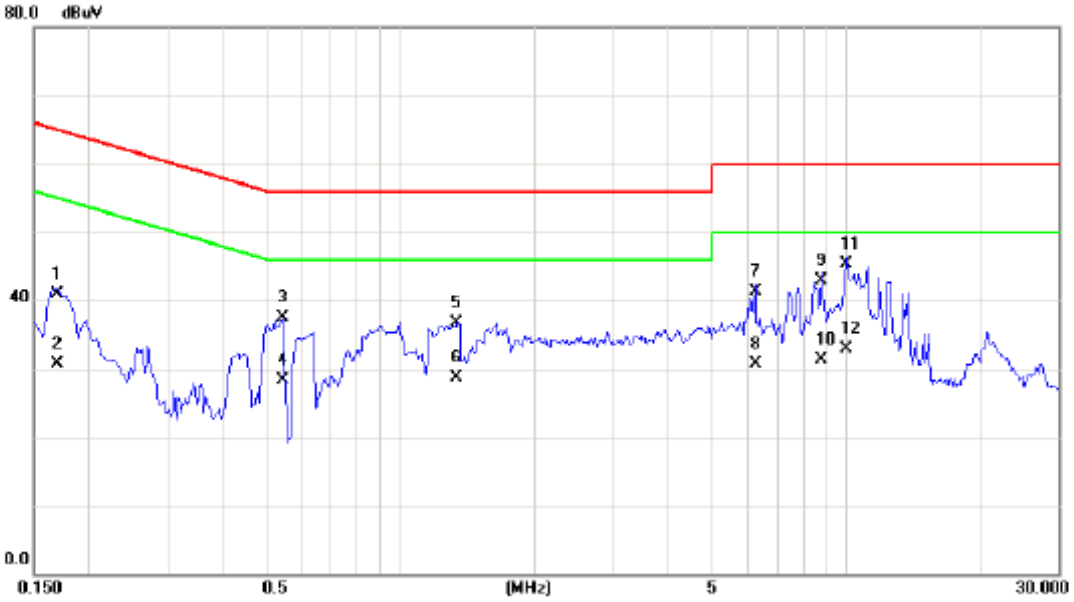
(2) Measuring frequency range from 150KHz to 30MHz.

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1693	35.10	9.77	44.87	64.99	-20.12	QP	
2		0.1693	25.10	9.77	34.87	54.99	-20.12	AVG	
3		0.5404	27.78	9.70	37.48	56.00	-18.52	QP	
4		0.5404	18.85	9.70	28.55	46.00	-17.45	AVG	
5		0.9430	25.13	9.71	34.84	56.00	-21.16	QP	
6	*	0.9430	21.02	9.71	30.73	46.00	-15.27	AVG	
7		1.7202	26.33	9.69	36.02	56.00	-19.98	QP	
8		1.7202	18.09	9.69	27.78	46.00	-18.22	AVG	
9		6.8750	33.12	9.81	42.93	60.00	-17.07	QP	
10		6.8750	22.44	9.81	32.25	50.00	-17.75	AVG	
11		10.6196	34.12	9.82	43.94	60.00	-16.06	QP	
12		10.6196	24.02	9.82	33.84	50.00	-16.16	AVG	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1693	31.11	9.77	40.88	64.99	-24.11	QP	
2		0.1693	21.02	9.77	30.79	54.99	-24.20	AVG	
3		0.5444	27.82	9.70	37.52	56.00	-18.48	QP	
4		0.5444	18.59	9.70	28.29	46.00	-17.71	AVG	
5		1.3413	27.10	9.70	36.80	56.00	-19.20	QP	
6		1.3413	19.10	9.70	28.80	46.00	-17.20	AVG	
7		6.2520	31.52	9.81	41.33	60.00	-18.67	QP	
8		6.2520	20.85	9.81	30.66	50.00	-19.34	AVG	
9		8.7757	33.16	9.82	42.98	60.00	-17.02	QP	
10		8.7757	21.57	9.82	31.39	50.00	-18.61	AVG	
11	*	9.9656	35.52	9.82	45.34	60.00	-14.66	QP	
12		9.9656	23.06	9.82	32.88	50.00	-17.12	AVG	

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) & RSS-210 section 2.2 & Annex 8 (A8.5), then the 15.209(a) & RSS-Gen limit in the table below has to be followed.

Frequency (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz for PK/AVG detector
Start ~ Stop Frequency	90kHz~110kHz for QP detector
Start ~ Stop Frequency	110kHz~490kHz for PK/AVG detector
Start ~ Stop Frequency	490kHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2.2 MEASUREMENT INSTRUMENTS LIST ANS SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Apr. 25, 2014
2	Amplifier	HP	8447D	2944A09673	Apr. 25, 2014
3	Test Receiver	R&S	ESCI	100382	Apr. 25, 2014
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 02, 2014
5	Antenna	ETS	3115	00075789	Apr. 25, 2014
6	Amplifier	Agilent	8449B	3008A02274	Apr. 25, 2014
7	Spectrum	Agilent	E4408B	US39240143	Nov. 09, 2014
8	Test Cable	HUBER+SUHNER	C-45	N/A	Apr. 30, 2014
9	Controller	CT	SC100	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	Apr. 25, 2014
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Apr. 25, 2014
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Oct. 22, 2014

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

4.2.3 TEST PROCEDURE

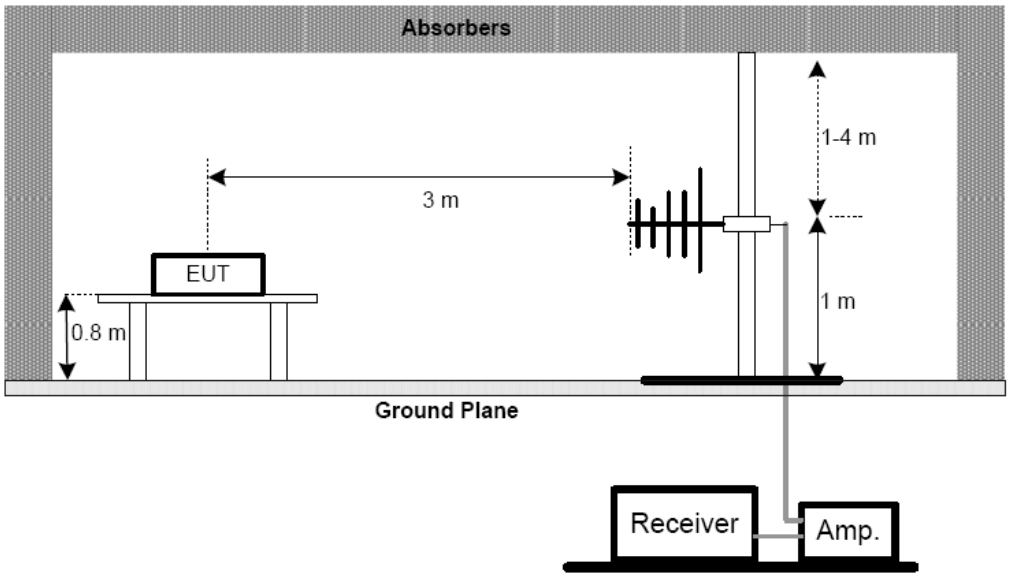
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

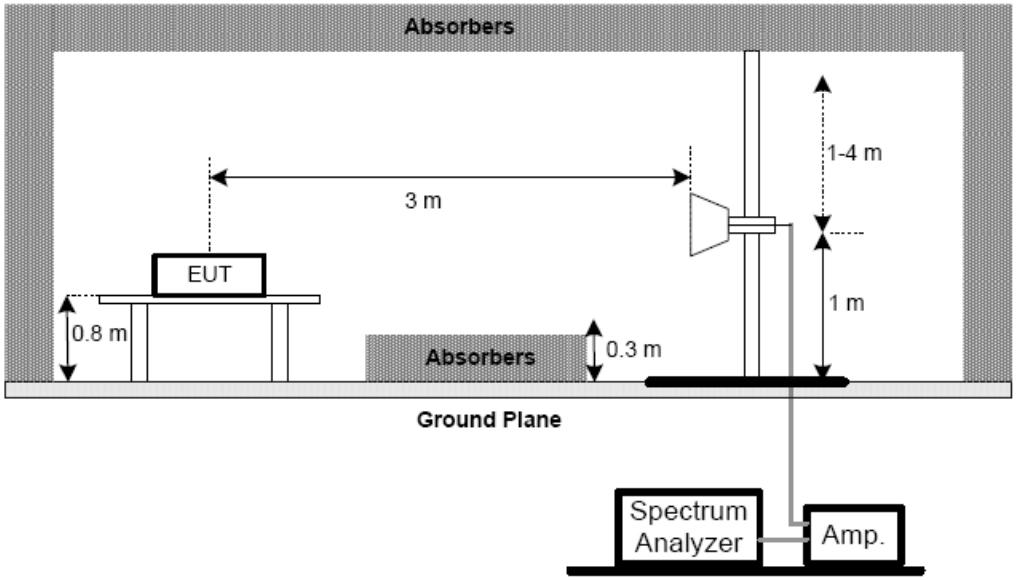
No deviation

4.2.5 TEST SETUP

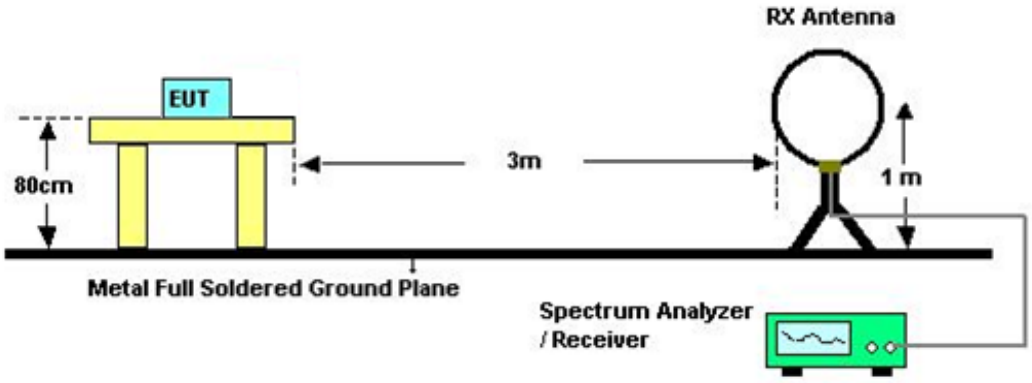
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For radiated emissions below 30MHz



4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.7 TEST RESULTS (BELOW 30MHZ)

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	55 %
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX B MODE CHANNEL 01		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0098	0°	27.14	24.30	51.44	127.78	-78.00	AVG
0.0098	0°	30.58	24.30	54.88	147.78	-94.13	PK
0.0363	0°	22.48	23.27	45.75	116.41	-72.64	AVG
0.0363	0°	25.67	23.27	48.94	136.41	-90.12	PK
0.0489	0°	21.46	22.47	43.93	113.82	-71.89	AVG
0.0489	0°	24.01	22.47	46.48	133.82	-89.16	PK
0.0691	0°	20.30	22.02	42.32	110.81	-69.40	AVG
0.0691	0°	23.86	22.02	45.88	130.81	-84.95	PK
0.4015	0°	24.65	20.04	44.69	95.53	-58.43	AVG
0.4015	0°	26.93	20.04	46.97	115.53	-75.09	PK
1.5360	0°	25.74	19.55	45.29	63.88	-16.93	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0097	90°	18.21	24.30	42.51	127.87	-84.81	AVG
0.0097	90°	21.52	24.30	45.82	147.87	-102.03	PK
0.0214	90°	16.85	24.21	41.06	121.00	-82.07	AVG
0.0214	90°	19.47	24.21	43.68	141.00	-99.76	PK
0.0473	90°	20.14	22.57	42.71	114.11	-71.94	AVG
0.0473	90°	23.45	22.57	46.02	134.11	-89.27	PK
0.0658	90°	21.01	22.08	43.09	111.24	-67.37	AVG
0.0658	90°	23.69	22.08	45.77	131.24	-84.45	PK
0.3725	90°	22.45	20.11	42.56	96.18	-55.72	AVG
0.3725	90°	25.81	20.11	45.92	116.18	-72.26	PK
1.6872	90°	24.59	19.53	44.12	63.06	-18.69	QP

Remark：

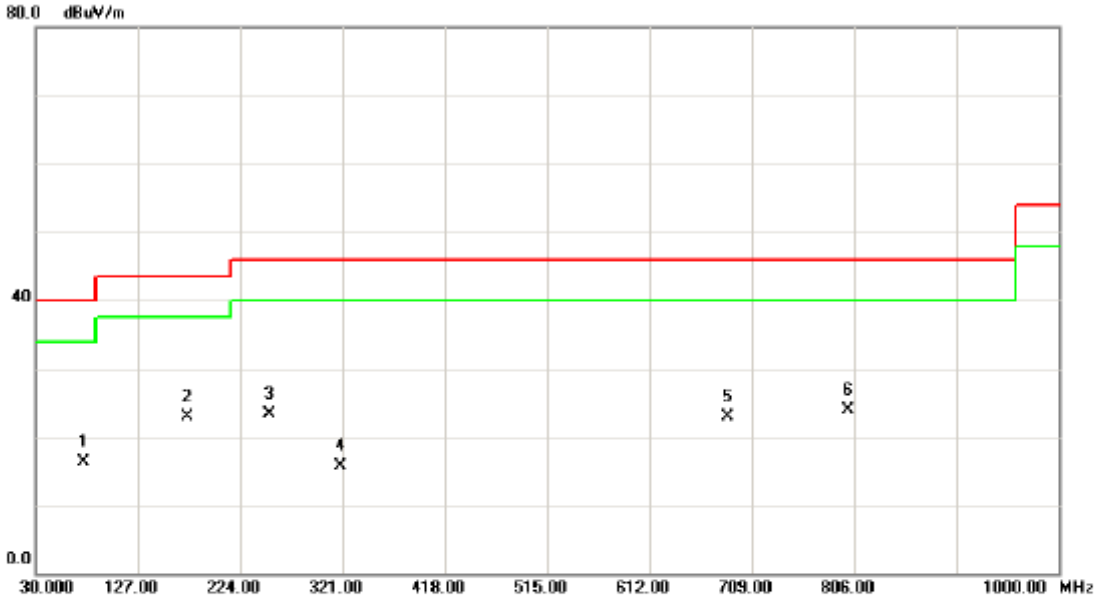
(1) The amplitude of spurious emissions which are attenuated by more than 20 dB belc the permissible value has no need to be reported.
(2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB);.
(3) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.2.8 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

Remark:

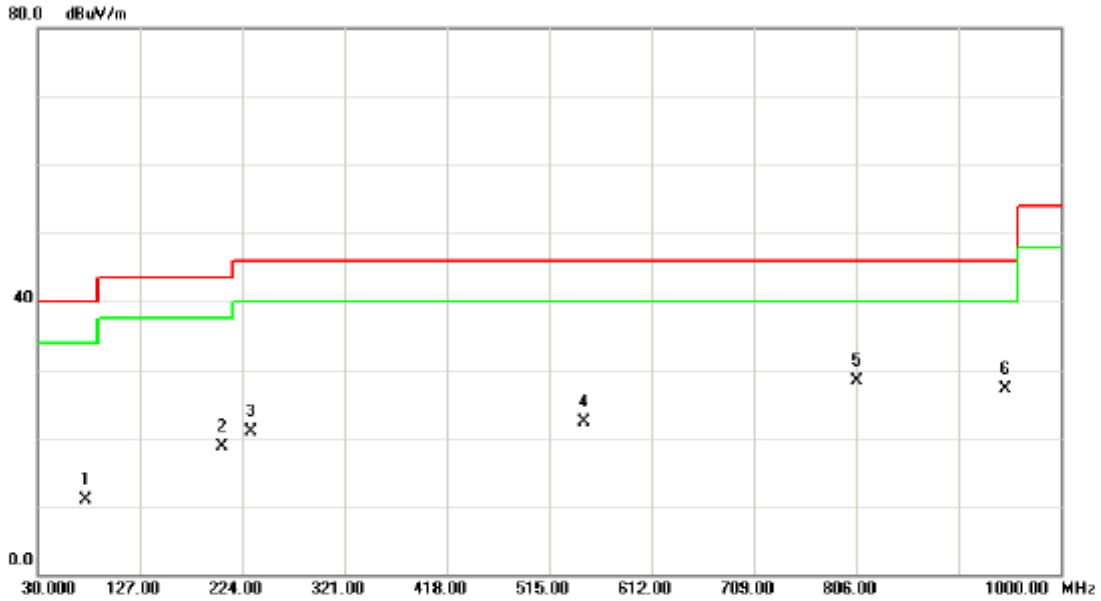
(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.
(2) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
(3) Measuring frequency range from 30MHz to 1000MHz.
(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 01 (HDD: Seagate)		



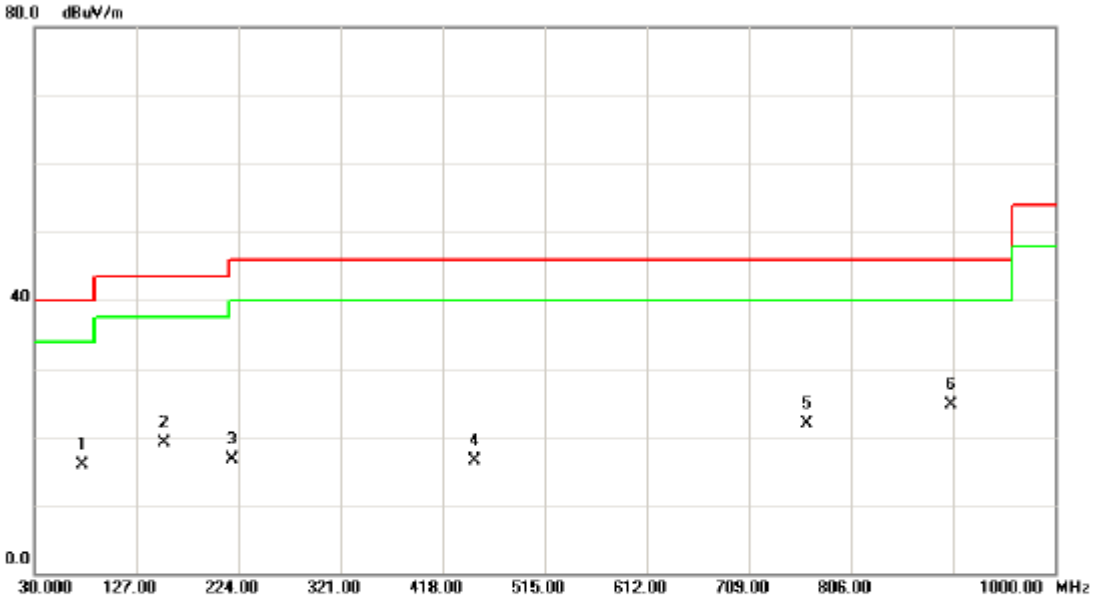
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	33.19	-16.85	16.34	40.00	-23.66	QP	
2	*	174.5300	35.61	-12.78	22.83	43.50	-20.67	QP	
3		251.1600	38.29	-14.95	23.34	46.00	-22.66	QP	
4		319.0600	27.12	-11.34	15.78	46.00	-30.22	QP	
5		686.6900	27.99	-5.00	22.99	46.00	-23.01	QP	
6		800.1800	27.05	-3.11	23.94	46.00	-22.06	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 01 (HDD: Seagate)		



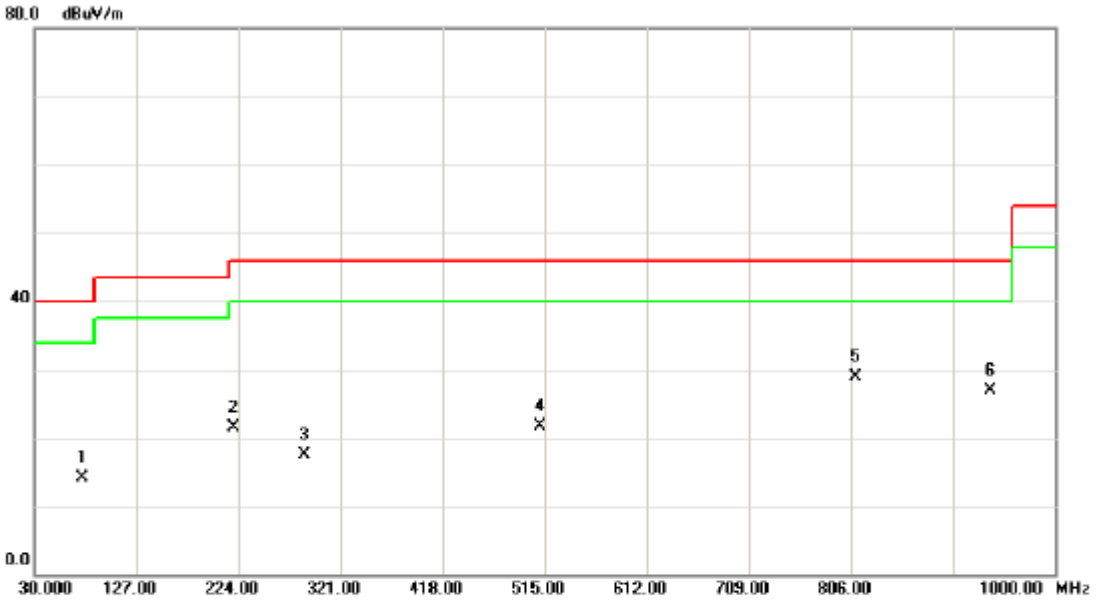
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	27.73	-16.85	10.88	40.00	-29.12	QP	
2		205.5700	33.99	-15.23	18.76	43.50	-24.74	QP	
3		232.7300	35.54	-14.57	20.97	46.00	-25.03	QP	
4		547.9800	30.16	-7.76	22.40	46.00	-23.60	QP	
5	*	806.0000	31.52	-3.18	28.34	46.00	-17.66	QP	
6		947.6200	27.61	-0.57	27.04	46.00	-18.96	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 06 (HDD: Seagate)		



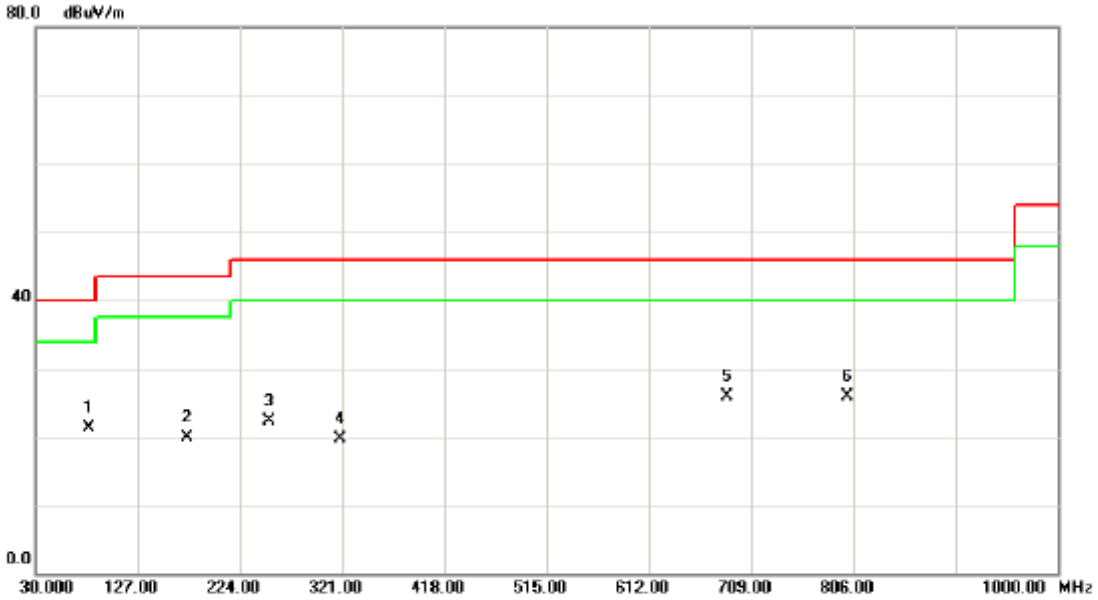
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	32.68	-16.85	15.83	40.00	-24.17	QP	
2		153.1900	32.89	-13.71	19.18	43.50	-24.32	QP	
3		218.1800	31.82	-15.06	16.76	46.00	-29.24	QP	
4		448.0700	25.54	-8.94	16.60	46.00	-29.40	QP	
5		763.3200	26.36	-4.42	21.94	46.00	-24.06	QP	
6	*	901.0600	25.99	-1.26	24.73	46.00	-21.27	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 06 (HDD: Seagate)		



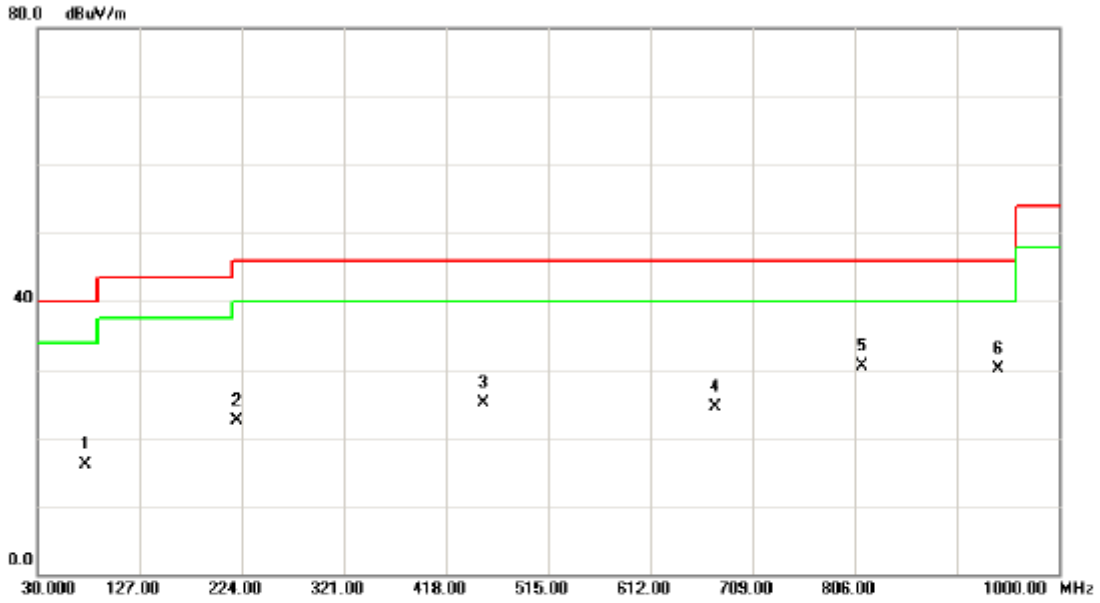
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	30.94	-16.85	14.09	40.00	-25.91	QP	
2		219.1500	36.63	-15.04	21.59	46.00	-24.41	QP	
3		287.0500	29.53	-12.03	17.50	46.00	-28.50	QP	
4		510.1500	31.55	-9.79	21.76	46.00	-24.24	QP	
5	*	810.8500	32.13	-3.24	28.89	46.00	-17.11	QP	
6		938.8900	27.52	-0.69	26.83	46.00	-19.17	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 11 (HDD: Seagate)		



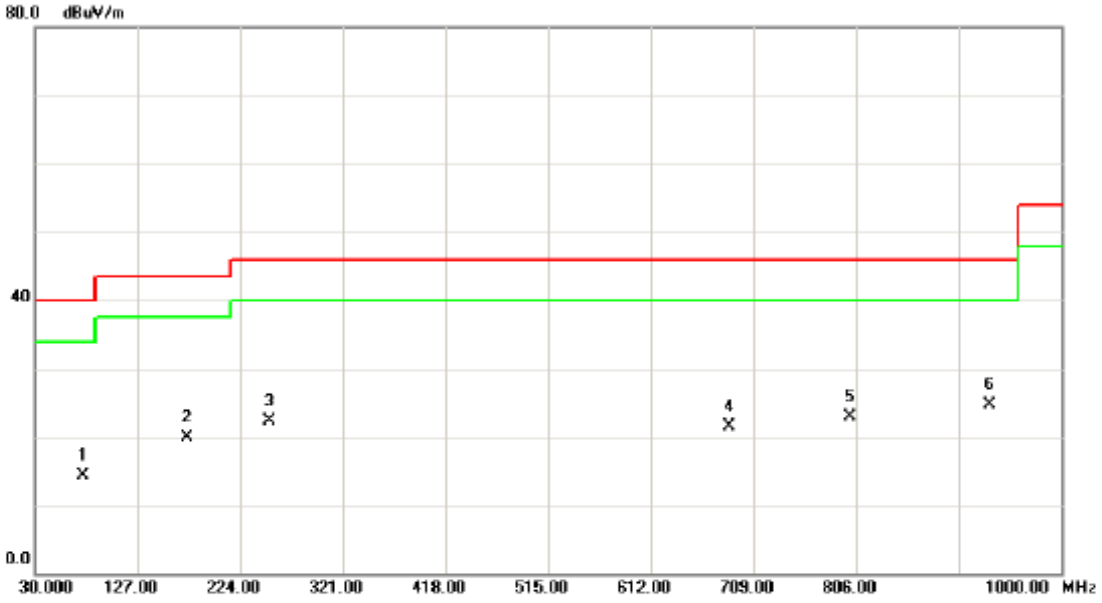
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	81.4100	38.82	-17.60	21.22	40.00	-18.78	QP	
2		173.5600	32.64	-12.77	19.87	43.50	-23.63	QP	
3		251.1600	37.29	-14.95	22.34	46.00	-23.66	QP	
4		319.0600	31.12	-11.34	19.78	46.00	-26.22	QP	
5		686.6900	30.99	-5.00	25.99	46.00	-20.01	QP	
6		800.1800	29.05	-3.11	25.94	46.00	-20.06	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 11 (HDD: Seagate)		



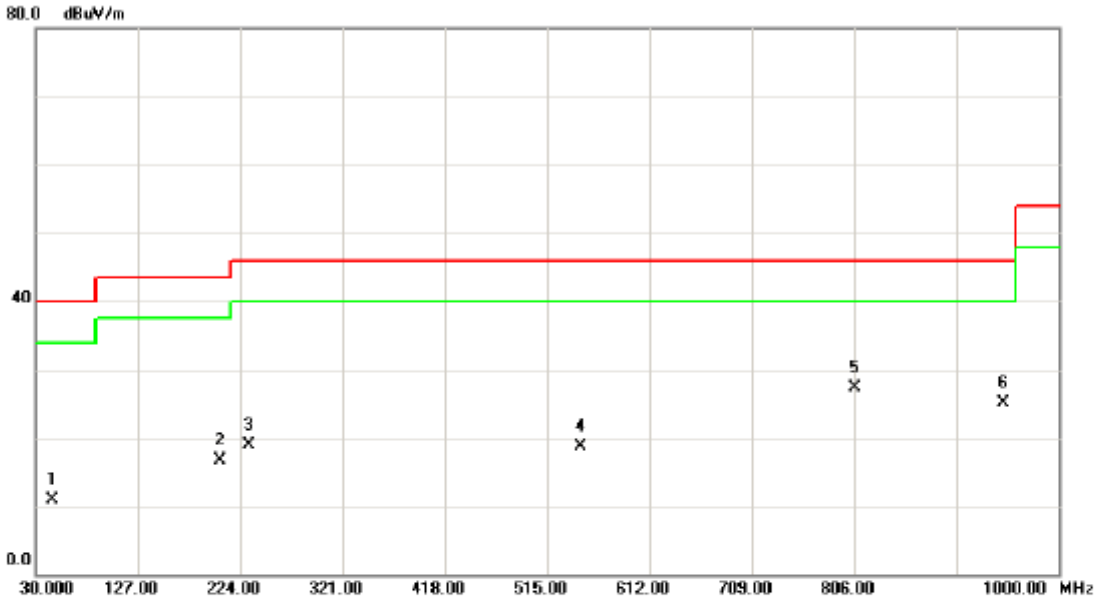
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	32.94	-16.85	16.09	40.00	-23.91	QP	
2		219.1500	37.63	-15.04	22.59	46.00	-23.41	QP	
3		453.8900	34.15	-9.02	25.13	46.00	-20.87	QP	
4		673.1100	29.81	-5.22	24.59	46.00	-21.41	QP	
5	*	812.7900	33.77	-3.25	30.52	46.00	-15.48	QP	
6		942.7700	30.69	-0.64	30.05	46.00	-15.95	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 01 (HDD: WD)		



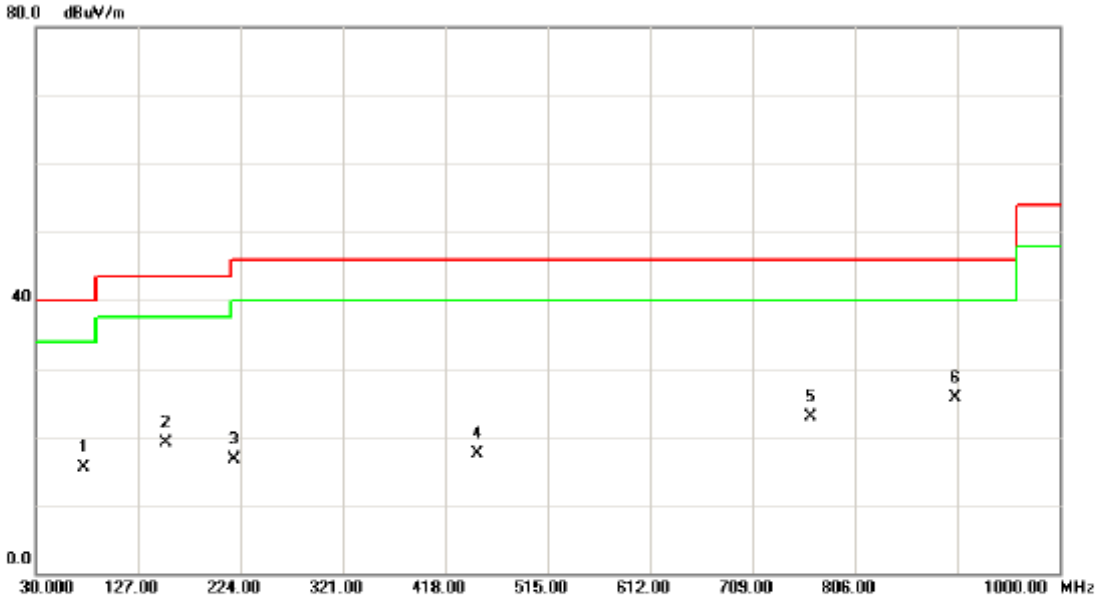
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	31.19	-16.85	14.34	40.00	-25.66	QP	
2		173.5600	32.64	-12.77	19.87	43.50	-23.63	QP	
3		251.1600	37.28	-14.95	22.33	46.00	-23.67	QP	
4		686.6900	26.49	-5.00	21.49	46.00	-24.51	QP	
5		800.1800	26.05	-3.11	22.94	46.00	-23.06	QP	
6	*	932.1000	25.47	-0.79	24.68	46.00	-21.32	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 01 (HDD: WD)		



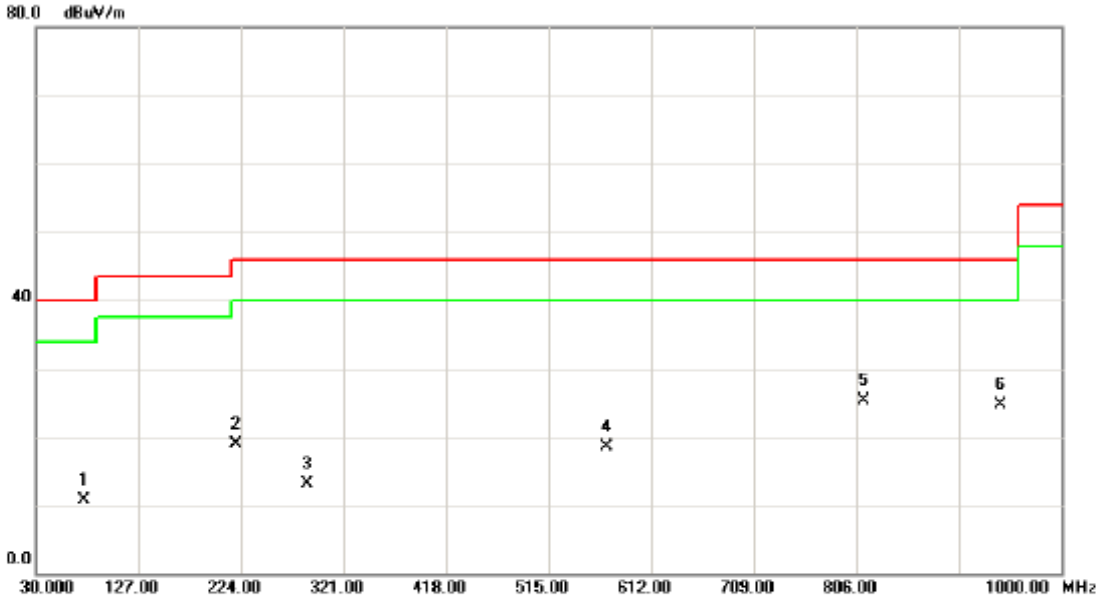
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		45.5200	25.09	-14.13	10.96	40.00	-29.04	QP	
2		205.5700	31.99	-15.23	16.76	43.50	-26.74	QP	
3		232.7300	33.54	-14.57	18.97	46.00	-27.03	QP	
4		546.0400	26.61	-7.86	18.75	46.00	-27.25	QP	
5	*	806.0000	30.52	-3.18	27.34	46.00	-18.66	QP	
6		947.6200	25.61	-0.57	25.04	46.00	-20.96	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 06 (HDD: WD)		



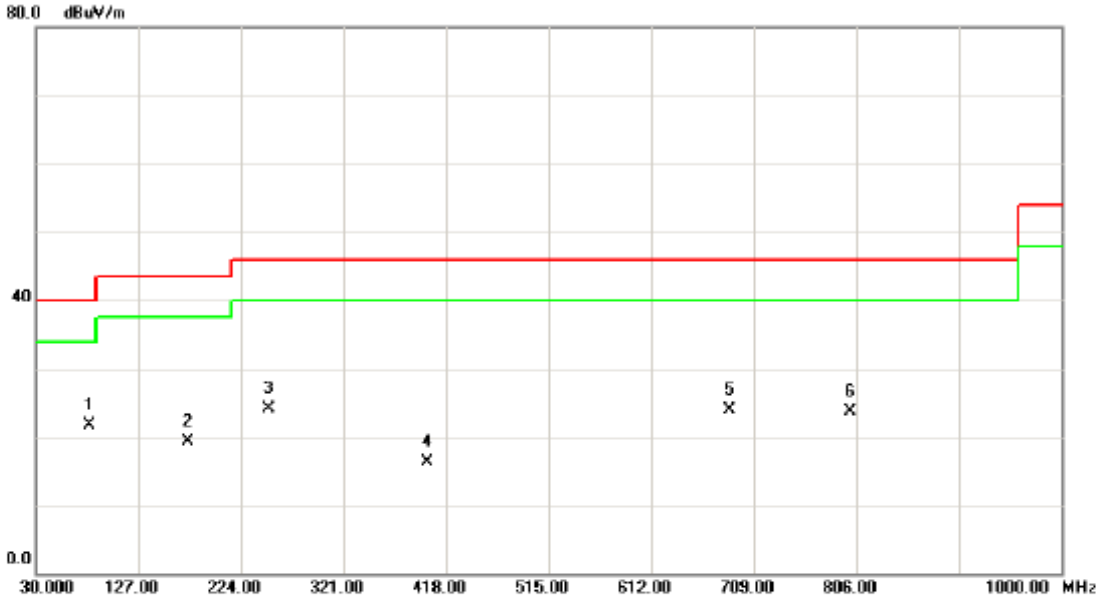
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	32.41	-16.85	15.56	40.00	-24.44	QP	
2		153.1900	32.89	-13.71	19.18	43.50	-24.32	QP	
3		218.1800	31.82	-15.06	16.76	46.00	-29.24	QP	
4		448.0700	26.54	-8.94	17.60	46.00	-28.40	QP	
5		763.3200	27.36	-4.42	22.94	46.00	-23.06	QP	
6	*	901.0600	26.99	-1.26	25.73	46.00	-20.27	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 06 (HDD: WD)		



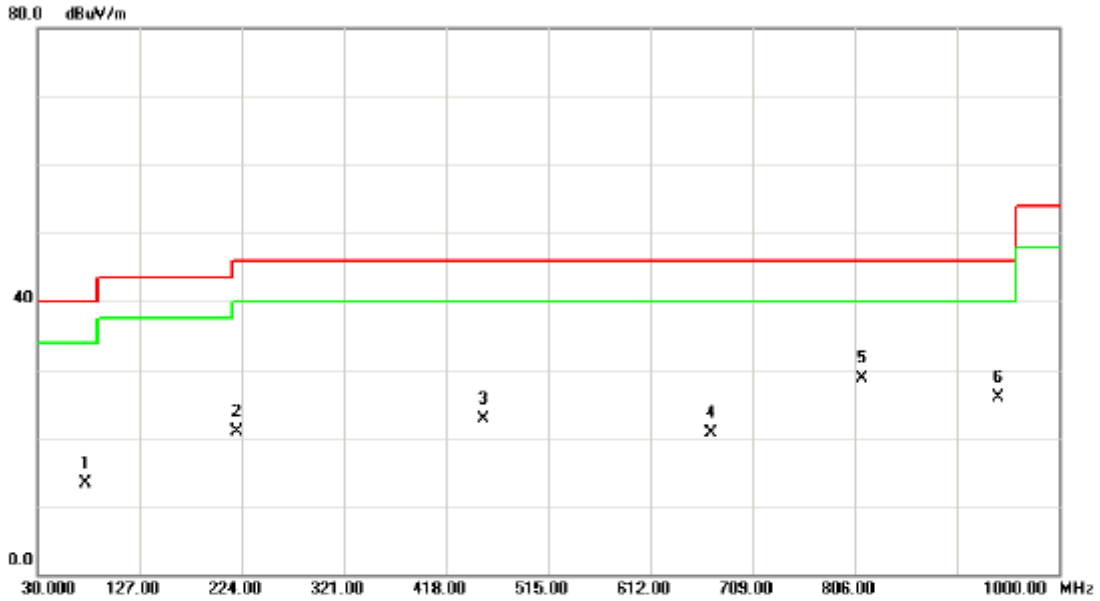
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	27.48	-16.85	10.63	40.00	-29.37	QP	
2		219.1500	33.94	-15.04	18.90	46.00	-27.10	QP	
3		287.0500	25.10	-12.03	13.07	46.00	-32.93	QP	
4		569.3200	26.31	-7.83	18.48	46.00	-27.52	QP	
5	*	812.7900	28.65	-3.25	25.40	46.00	-20.60	QP	
6		941.8000	25.31	-0.65	24.66	46.00	-21.34	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 11 (HDD: WD)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	81.4100	39.24	-17.60	21.64	40.00	-18.36	QP	
2		173.5600	32.15	-12.77	19.38	43.50	-24.12	QP	
3		250.1900	39.02	-14.97	24.05	46.00	-21.95	QP	
4		400.5400	26.11	-9.87	16.24	46.00	-29.76	QP	
5		686.6900	28.98	-5.00	23.98	46.00	-22.02	QP	
6		800.1800	26.78	-3.11	23.67	46.00	-22.33	QP	

EUT:	Multi-mode WiFi Storage	Model Name:	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 11 (HDD: WD)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		75.5900	30.14	-16.85	13.29	40.00	-26.71	QP	
2		219.1500	35.87	-15.04	20.83	46.00	-25.17	QP	
3		453.8900	31.81	-9.02	22.79	46.00	-23.21	QP	
4		669.2300	26.08	-5.28	20.80	46.00	-25.20	QP	
5	*	812.7900	32.01	-3.25	28.76	46.00	-17.24	QP	
6		942.7700	26.45	-0.64	25.81	46.00	-20.19	QP	

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	24.11	13.48	34.09	58.20	47.57	74.00	54.00	X/E
2414.70	**V**	**55.54**	**53.39**	**34.16**	**89.70**	**87.55**			**X/F**
4824.90	V	33.05	23.70	6.43	39.48	30.13	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

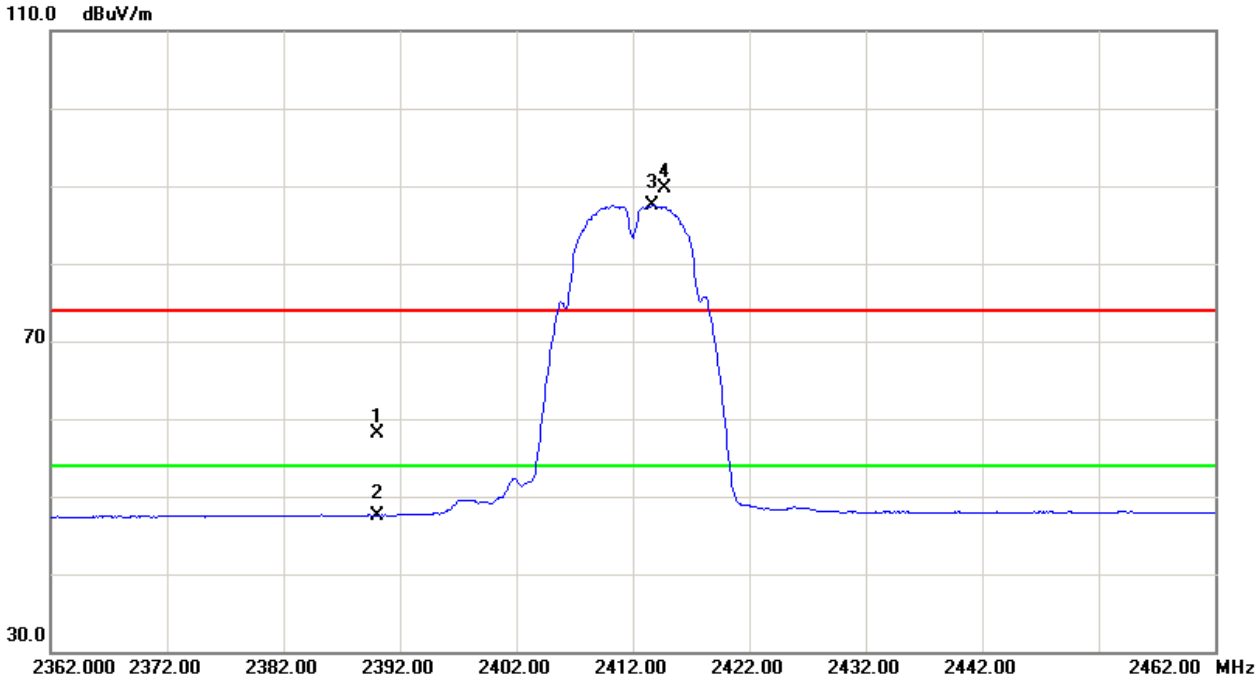
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

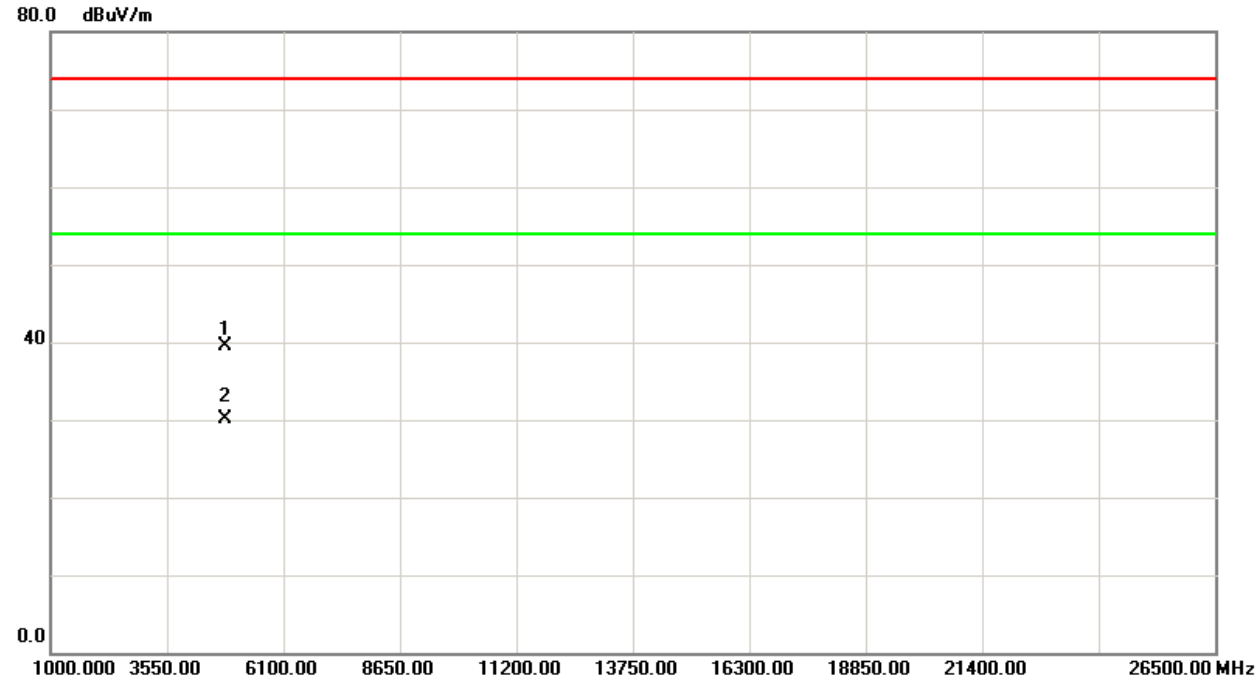
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	24.02	13.54	34.09	58.11	47.63	74.00	54.00	X/E
2411.10	**H**	**56.94**	**54.97**	**34.16**	**91.10**	**89.13**			**X/F**
4824.90	H	35.31	24.16	6.43	41.74	30.59	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

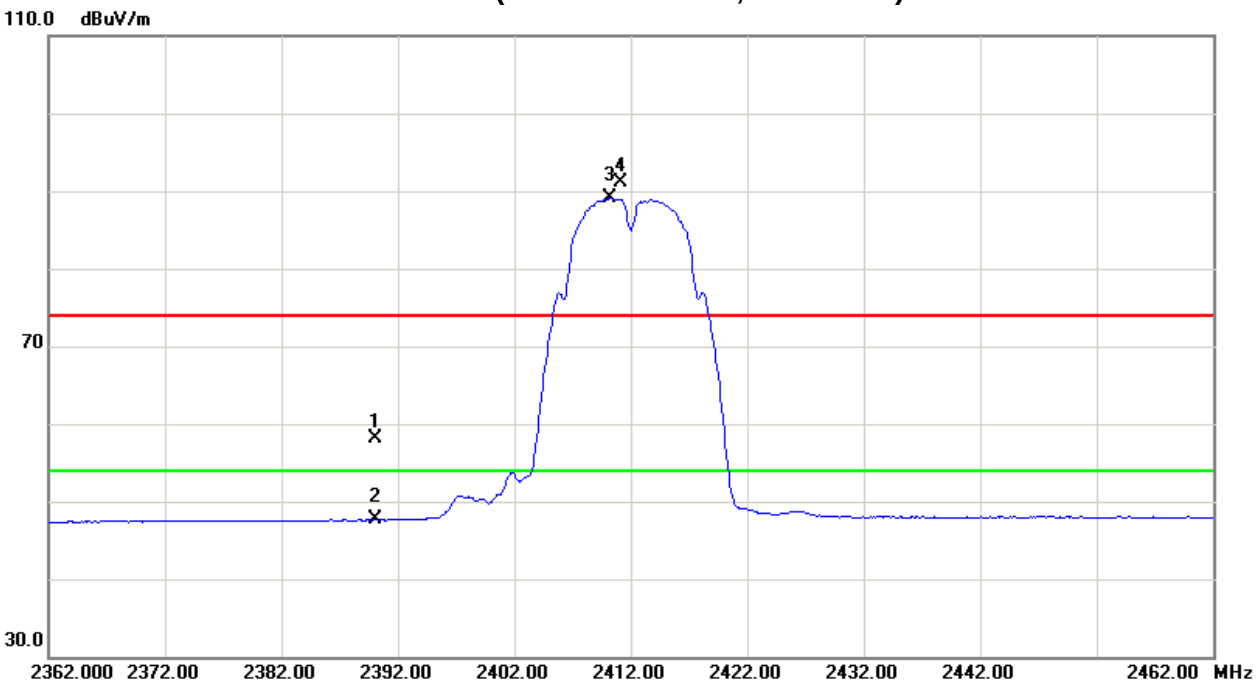
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

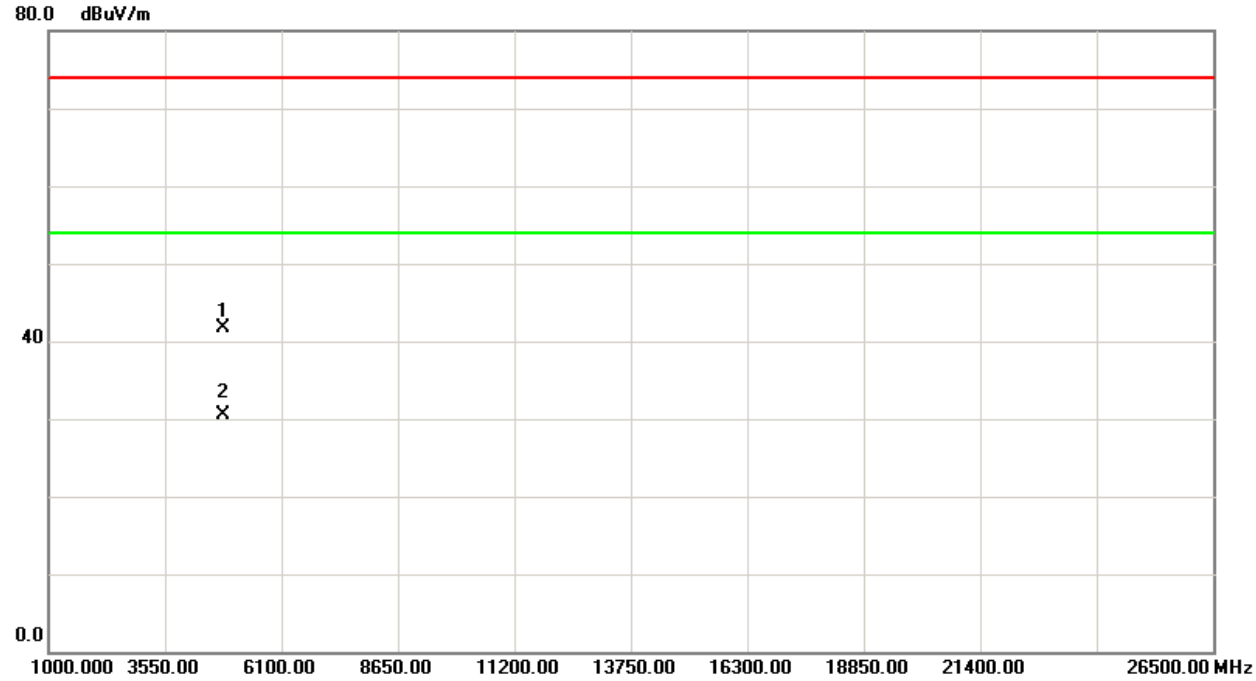
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2436.20	**V**	**55.27**	**53.28**	**34.23**	**89.50**	**87.51**			**X/F**
4874.70	V	33.40	23.73	6.58	39.98	30.31	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

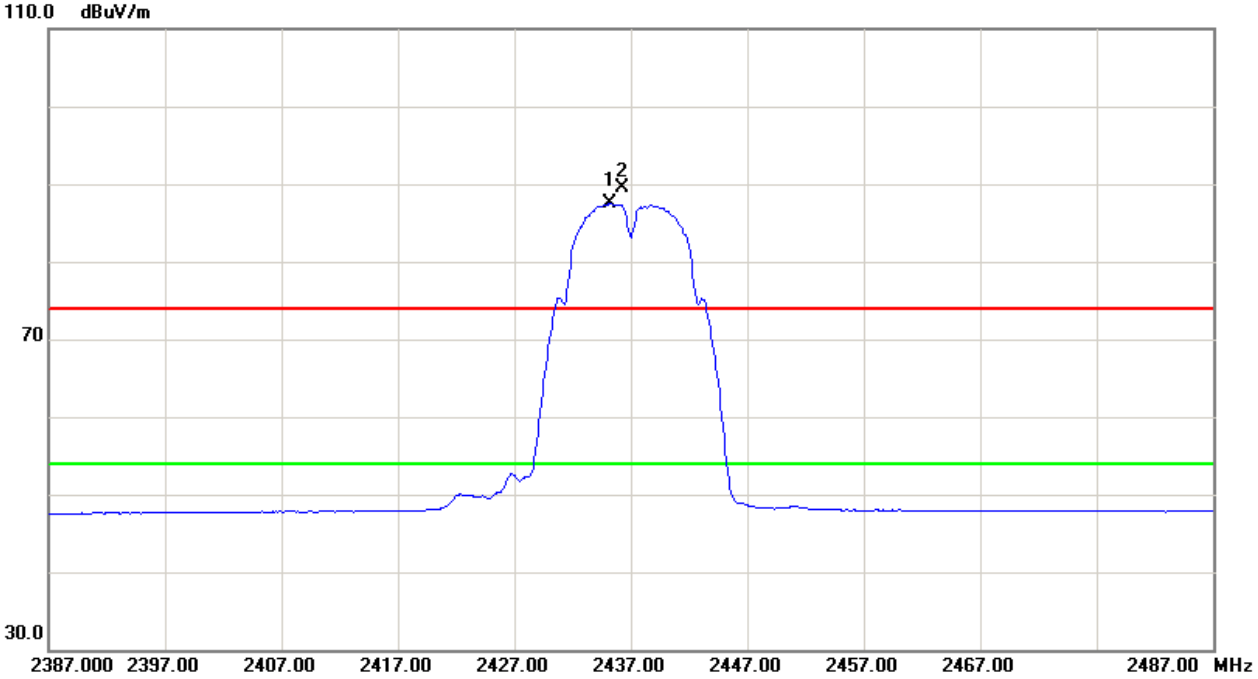
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

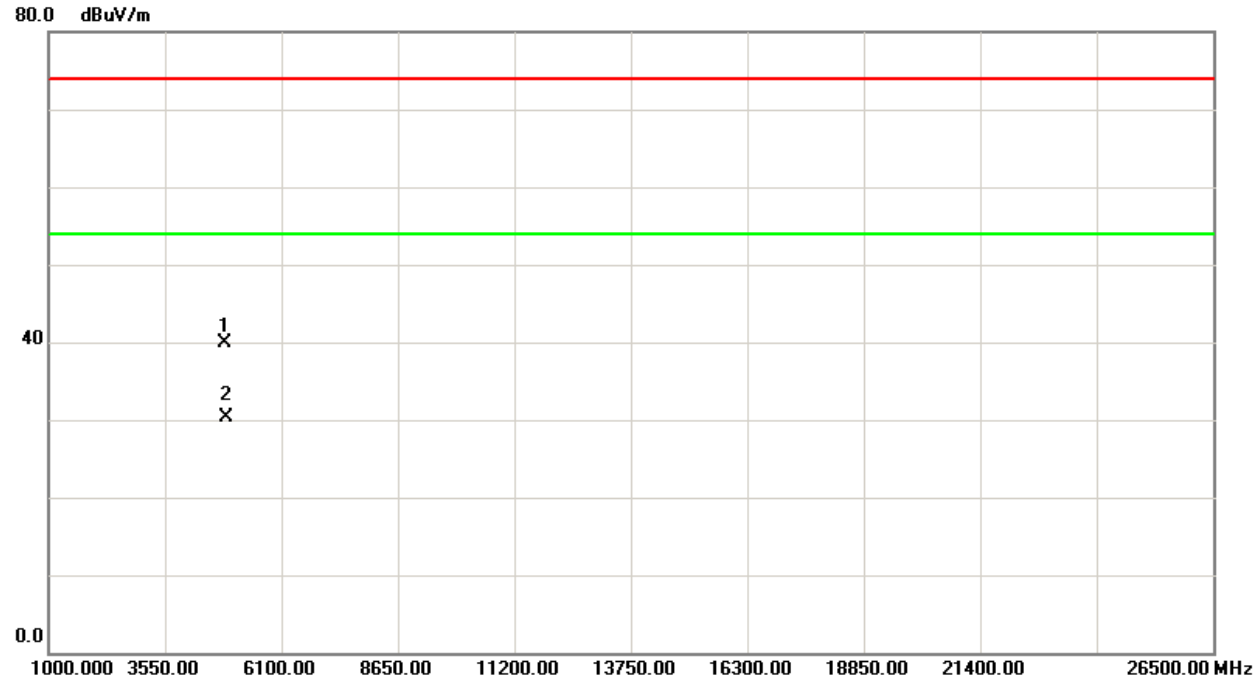
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2436.20	**H**	**57.06**	**55.01**	**34.23**	**91.29**	**89.24**			**X/F**
4874.70	H	34.29	24.51	6.58	40.87	31.09	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

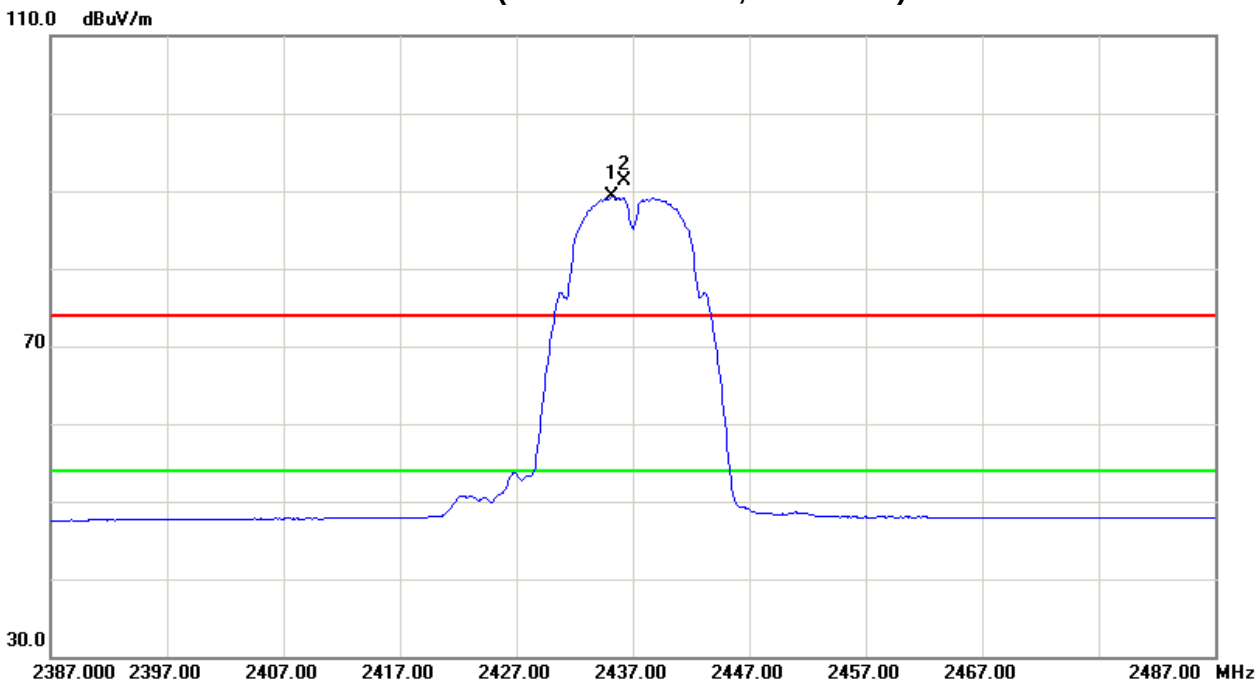
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

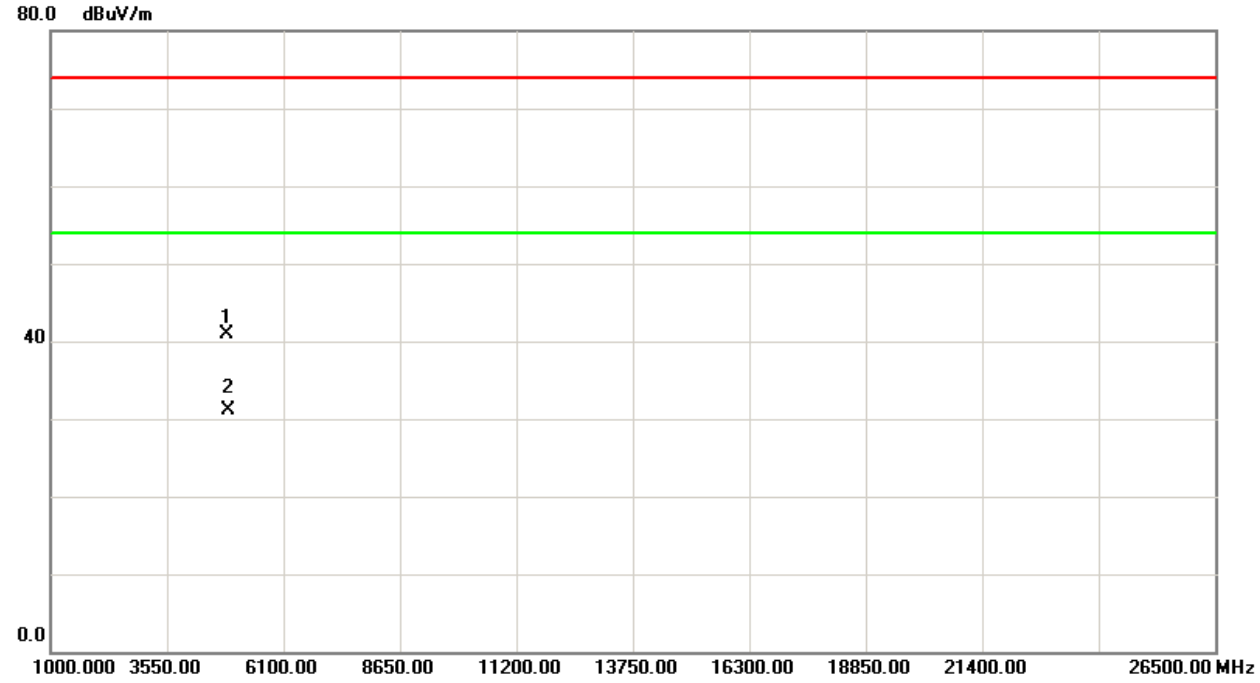
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2464.70	**V**	**55.27**	**53.14**	**34.31**	**89.58**	**87.45**			**X/F**
2483.50	V	23.25	13.52	34.37	57.62	47.89	74.00	54.00	X/E
4924.80	V	32.58	23.75	6.72	39.30	30.47	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

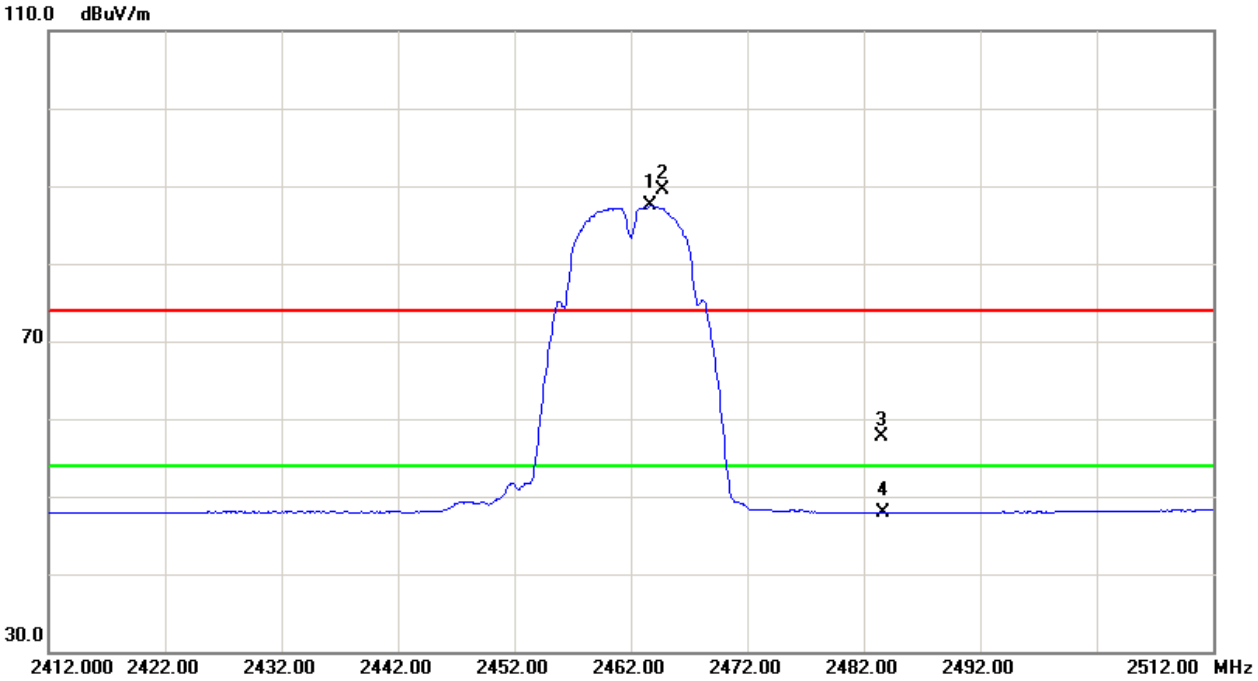
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

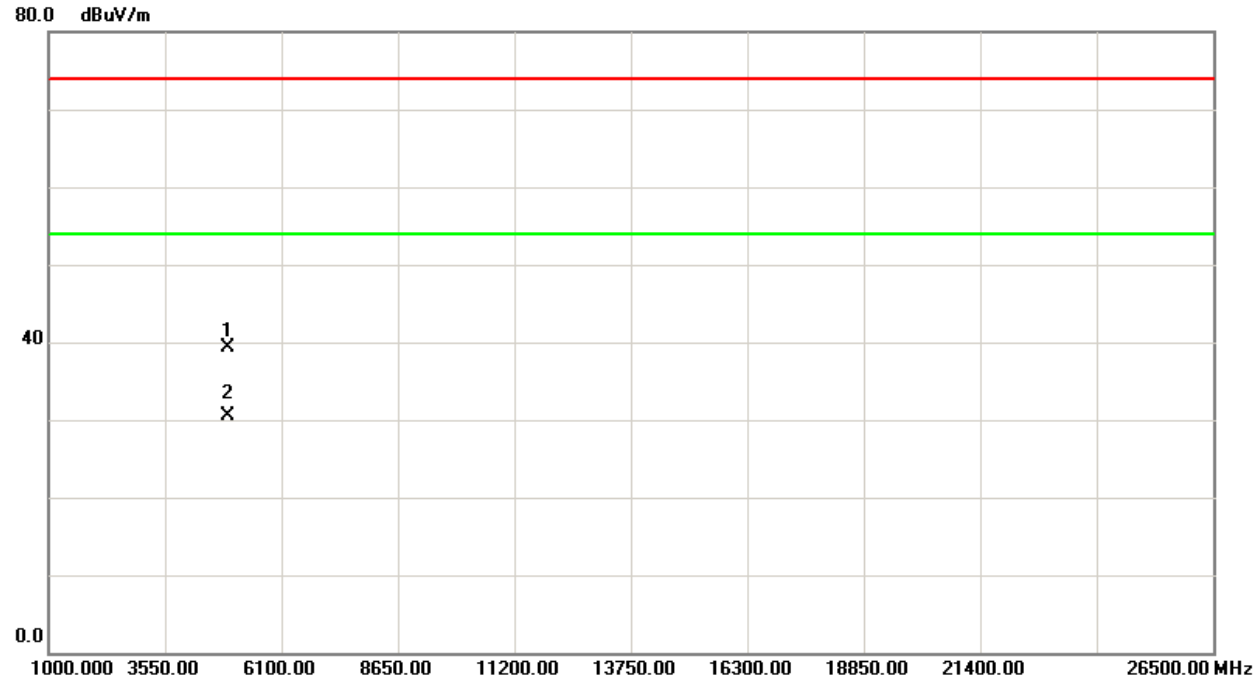
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH11 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2464.70	**H**	**57.60**	**55.47**	**34.31**	**91.91**	**89.78**			**X/F**
2483.50	H	23.38	13.58	34.37	57.75	47.95	74.00	54.00	X/E
4924.80	H	34.32	23.55	6.72	41.04	30.27	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

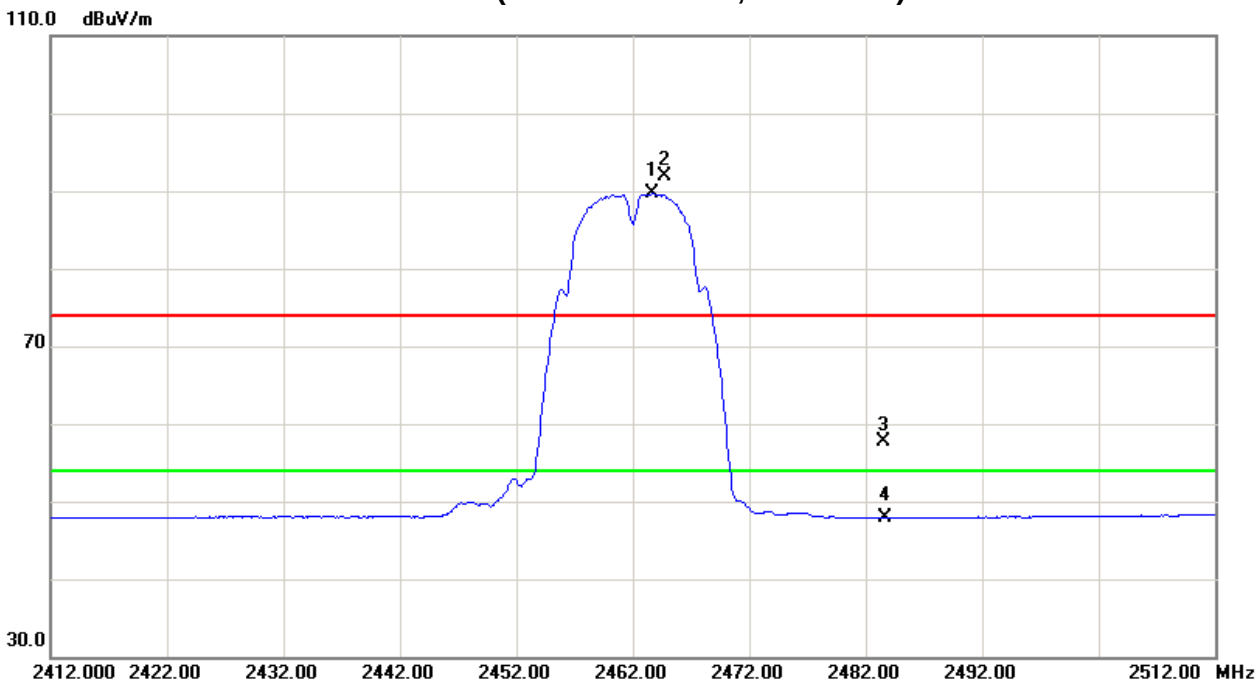
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

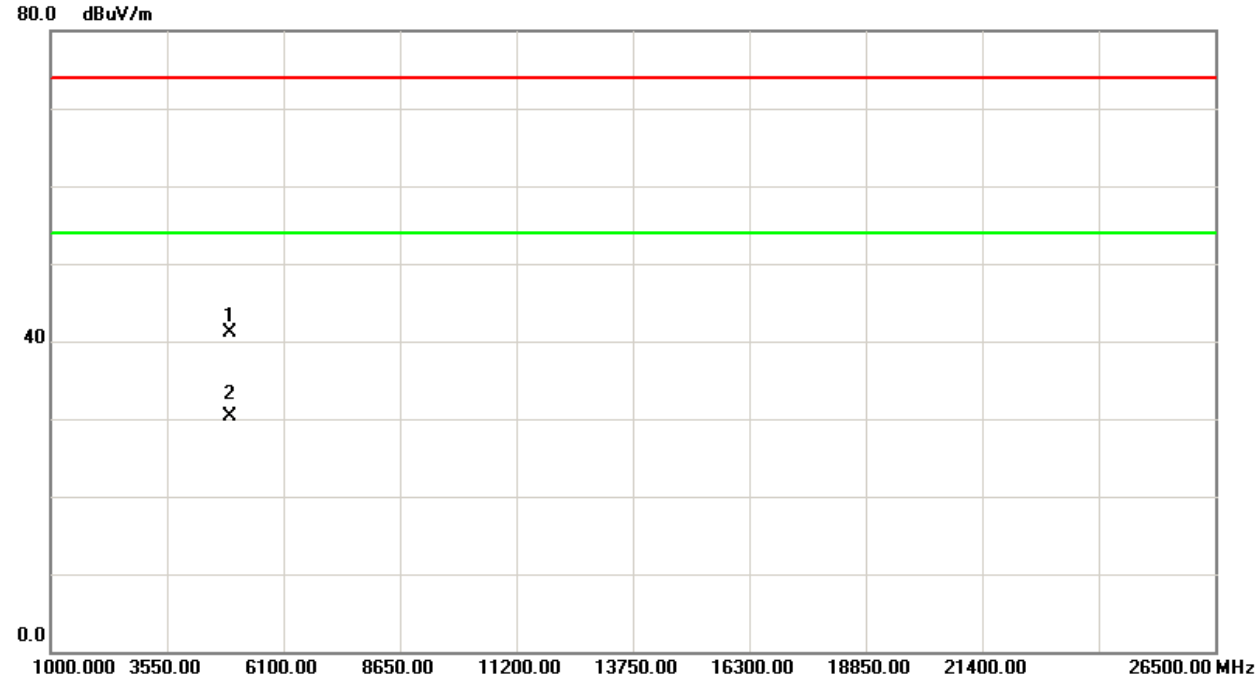
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH11 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	24.29	14.66	34.09	58.38	48.75	74.00	54.00	X/E
2407.20	**V**	**59.25**	**50.23**	**34.14**	**93.39**	**84.37**			**X/F**
4824.01	V	32.81	23.79	6.43	39.24	30.22	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

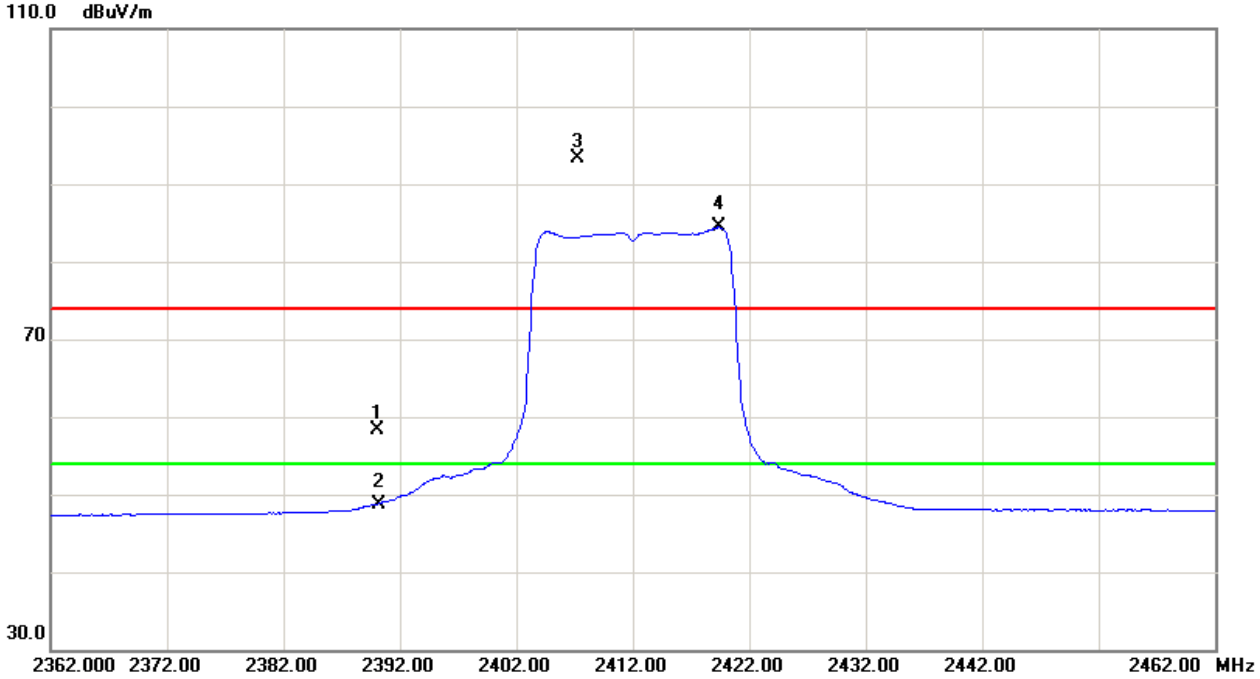
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

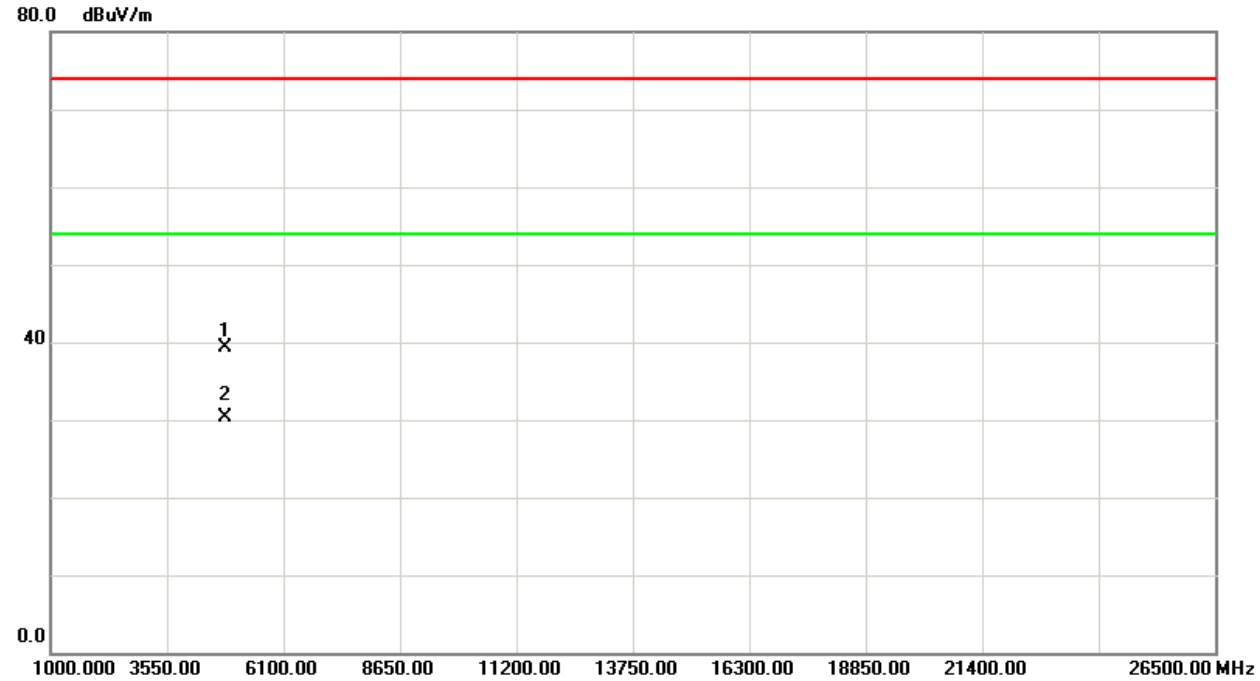
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	26.34	15.45	34.09	60.43	49.54	74.00	54.00	X/E
2407.10	**H**	**61.11**	**51.71**	**34.14**	**95.25**	**85.85**			**X/F**
4824.03	H	35.41	23.90	6.43	41.84	30.33	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

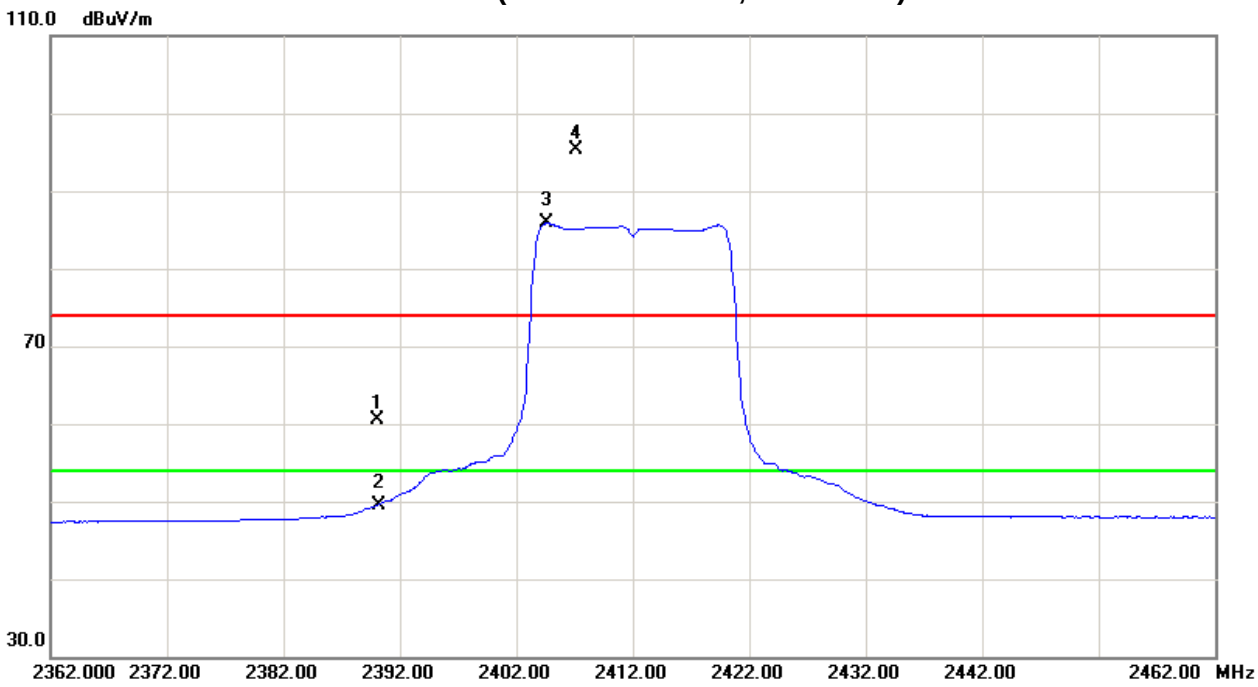
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

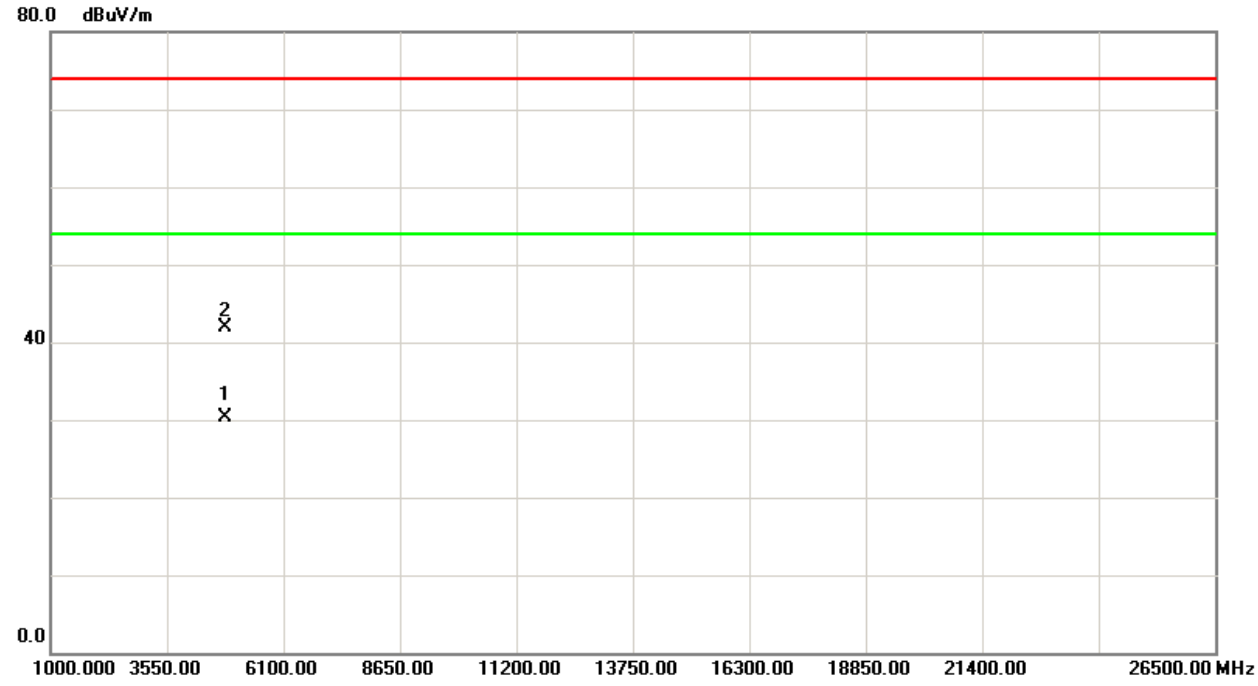
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2432.10	**V**	**58.54**	**49.23**	**34.21**	**92.75**	**83.44**			**X/F**
4874.01	V	33.29	23.70	6.58	39.87	30.28	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

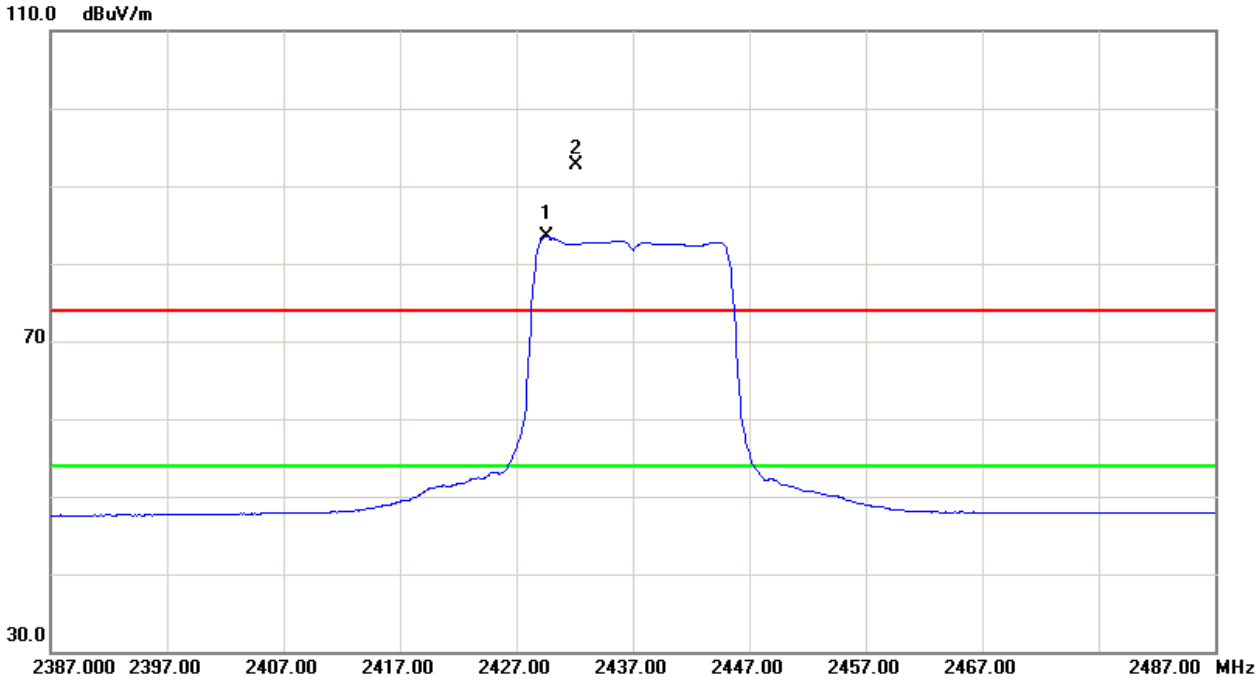
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

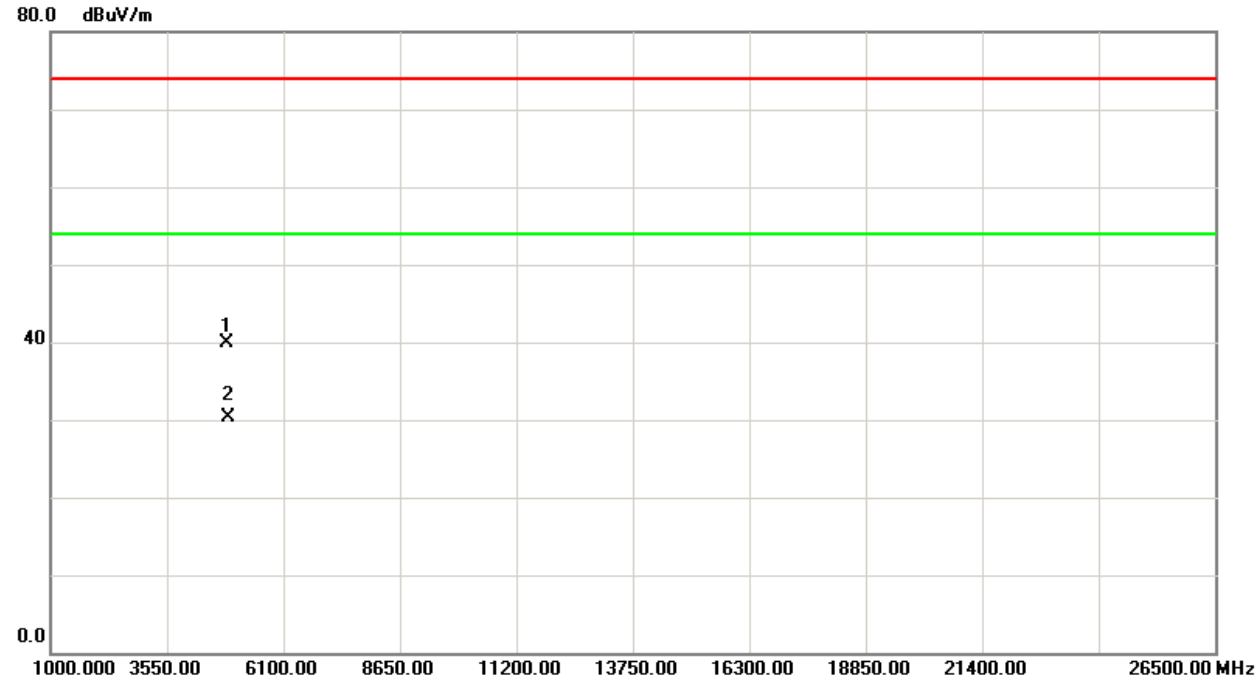
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2432.30	**H**	**60.35**	**50.97**	**34.22**	**94.57**	**85.19**			**X/F**
4874.01	H	34.37	24.48	6.58	40.95	31.06	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

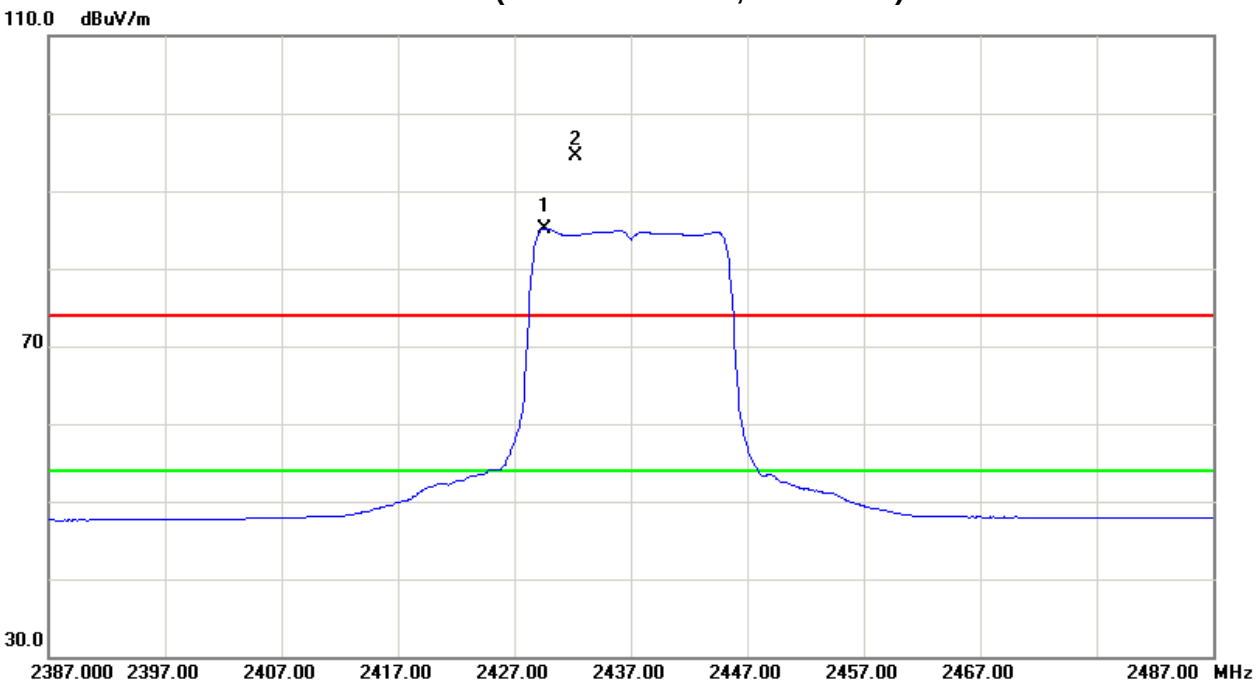
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

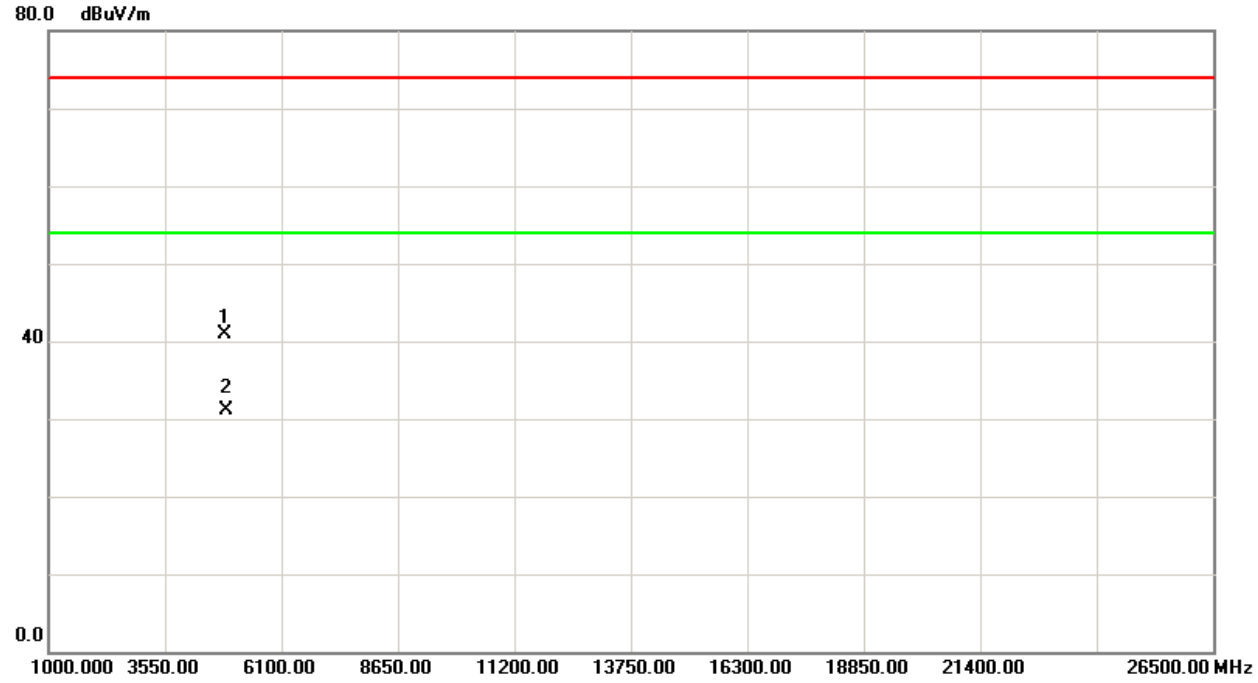
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2457.00	**V**	**58.34**	**49.02**	**34.29**	**92.63**	**83.31**			**X/F**
2483.50	V	24.37	13.99	34.37	58.74	48.36	74.00	54.00	X/E
4924.11	V	34.21	23.45	6.72	40.93	30.17	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

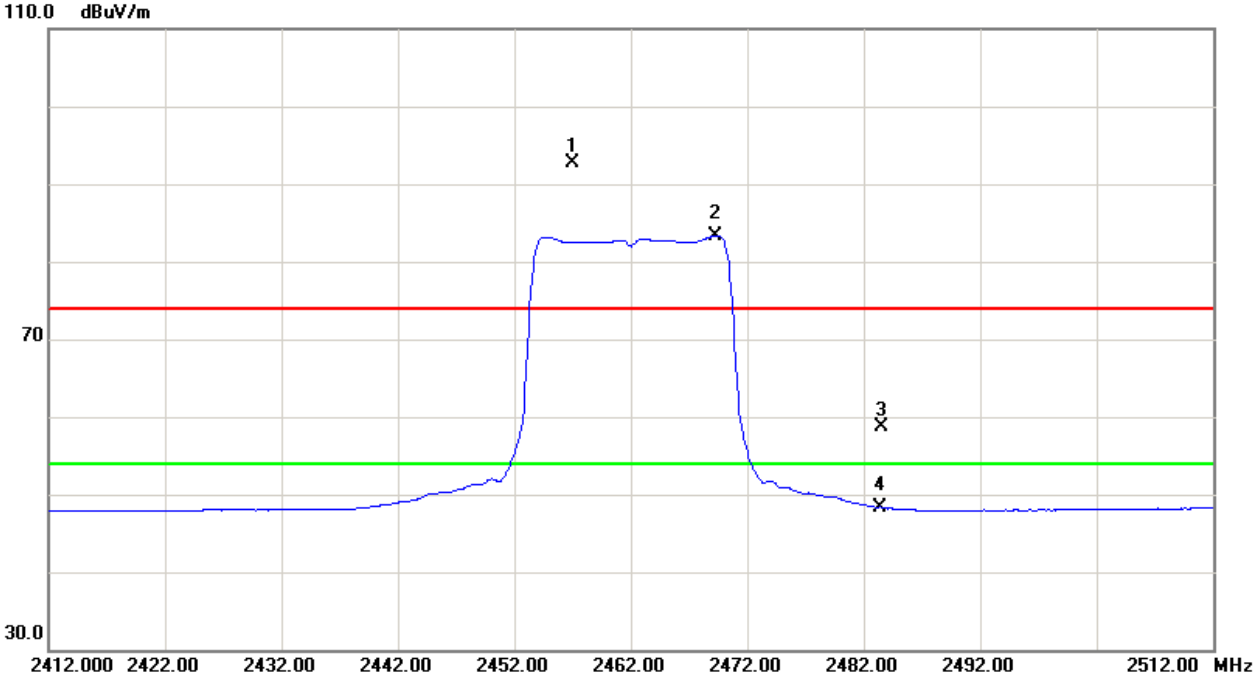
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

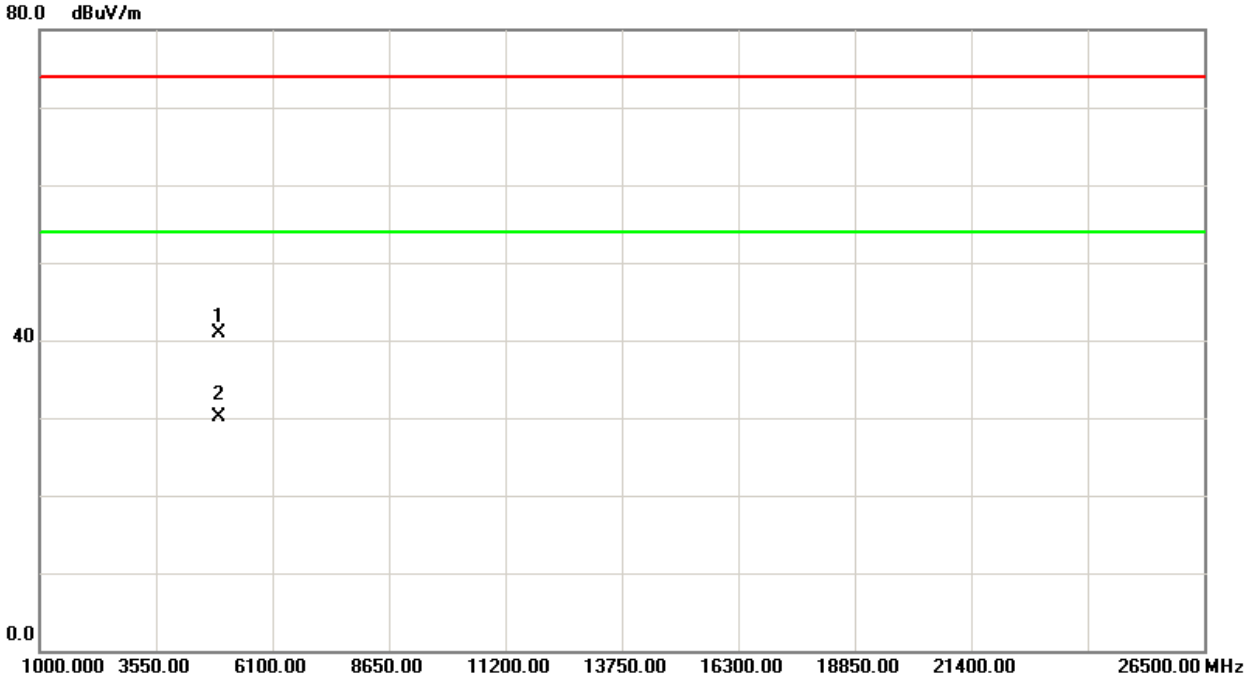
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH11 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2457.20	**H**	**60.86**	**51.66**	**34.29**	**95.15**	**85.95**			**X/F**
2483.50	H	26.89	14.44	34.37	61.26	48.81	74.00	54.00	X/E
4924.11	H	34.18	23.70	6.72	40.90	30.42	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

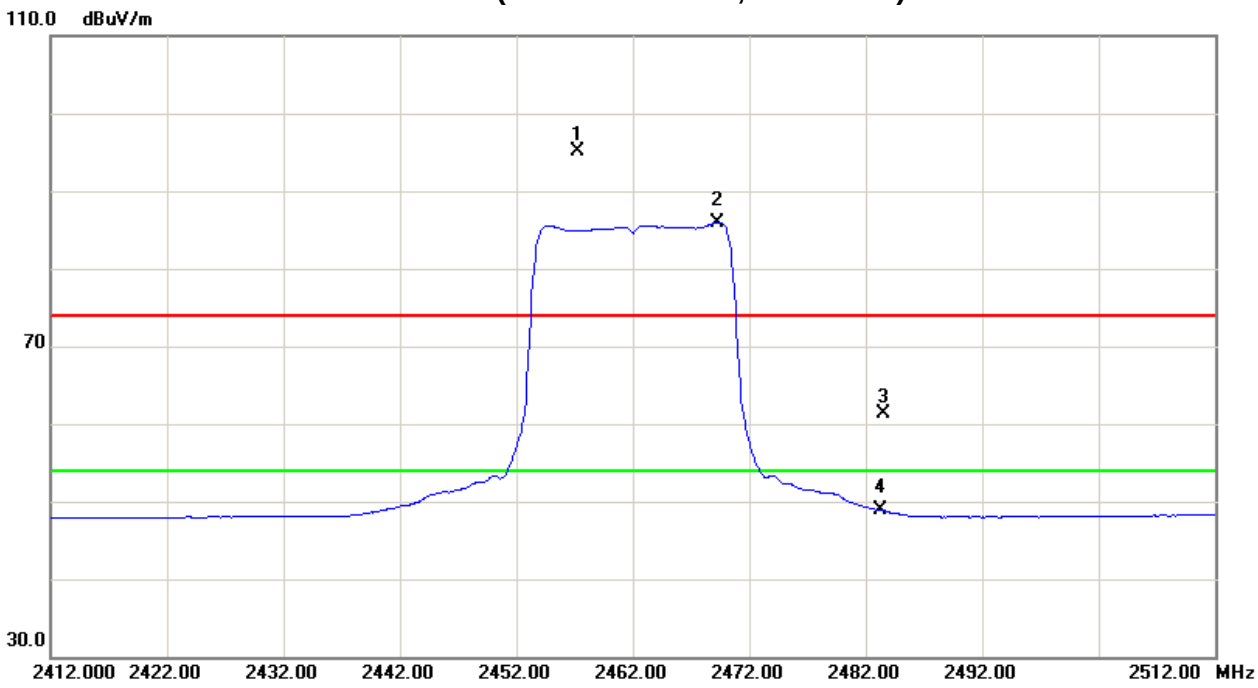
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

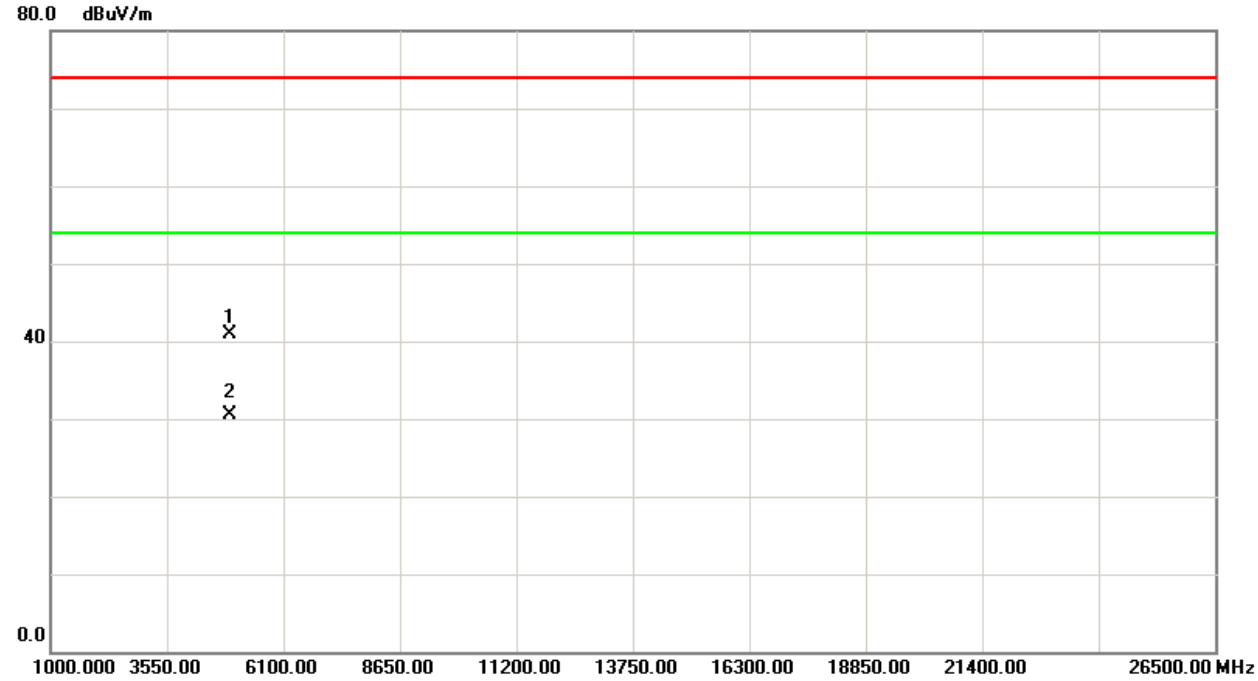
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH11 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	25.29	14.02	34.09	59.38	48.11	74.00	54.00	X/E
2409.00	**V**	**62.07**	**45.71**	**34.14**	**96.21**	**79.85**			**X/F**
4824.13	V	32.71	23.71	6.43	39.14	30.14	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

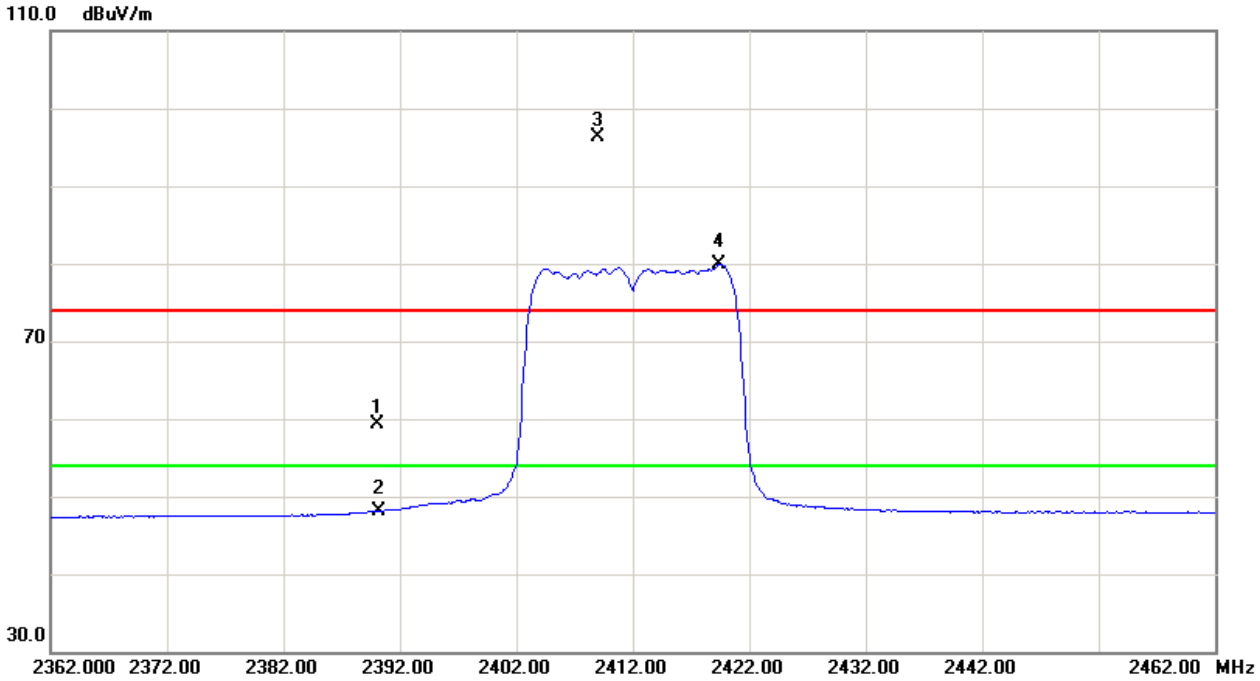
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

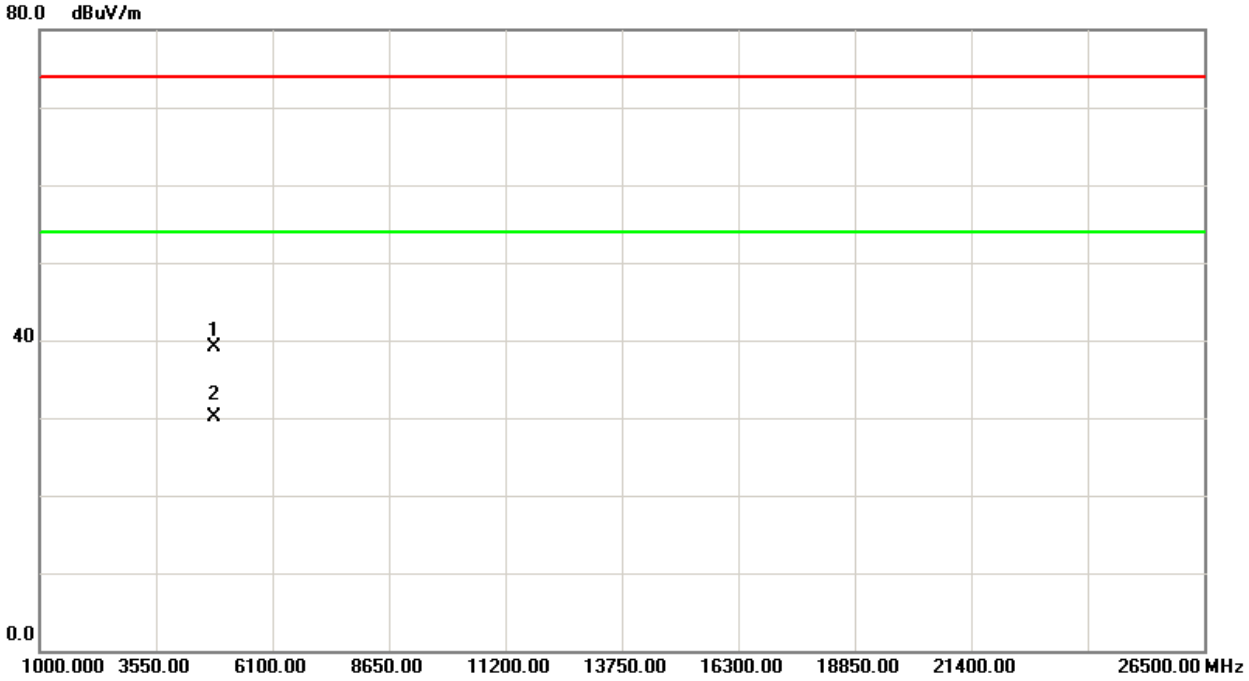
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	27.64	14.38	34.09	61.73	48.47	74.00	54.00	X/E
2404.70	**H**	**63.96**	**46.84**	**34.14**	**98.10**	**80.98**			**X/F**
4824.13	H	35.31	23.80	6.43	41.74	30.23	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

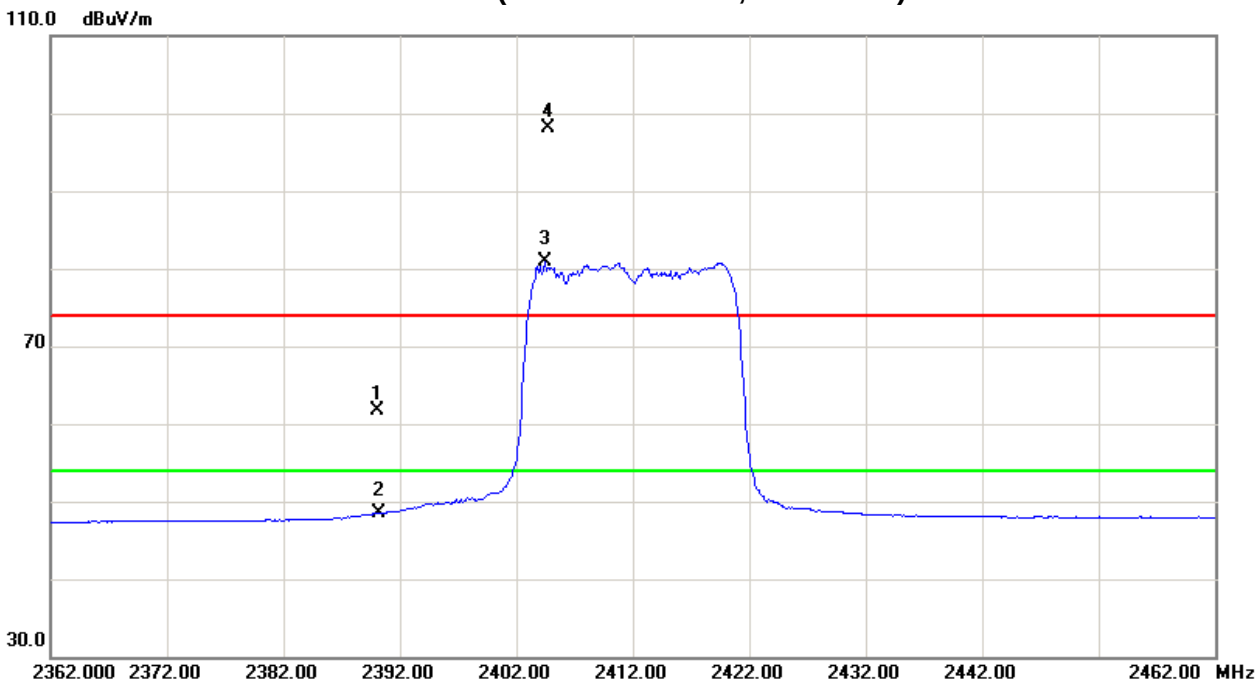
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

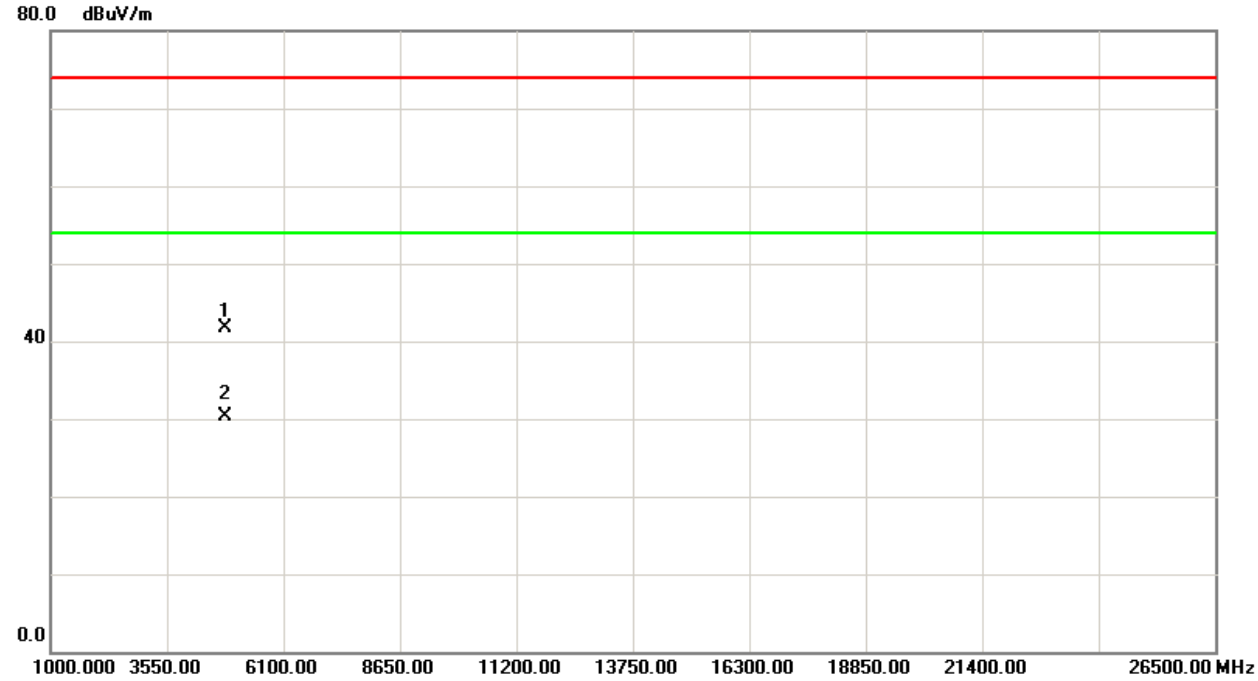
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2444.80	**V**	**57.04**	**41.90**	**34.25**	**91.29**	**76.15**			**X/F**
4874.01	V	33.29	23.62	6.58	39.87	30.20	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

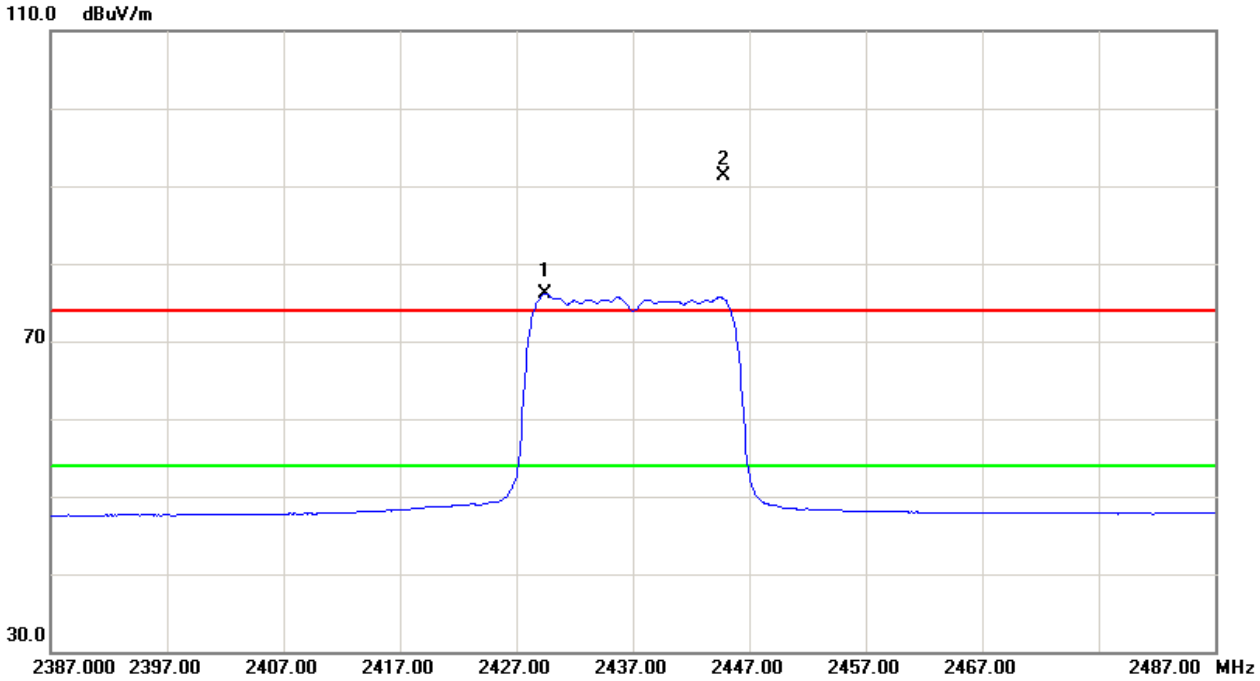
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

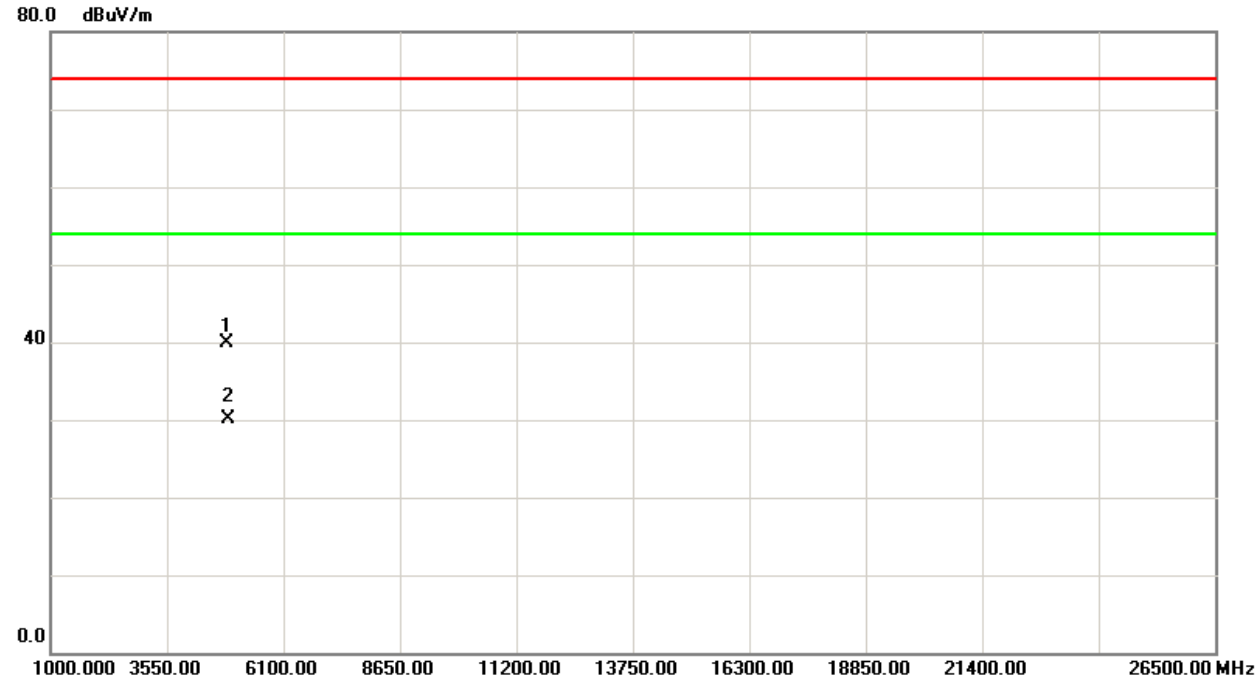
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2443.10	**H**	**58.56**	**43.40**	**34.25**	**92.81**	**77.65**			**X/F**
4874.01	H	34.32	24.46	6.58	40.90	31.04	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

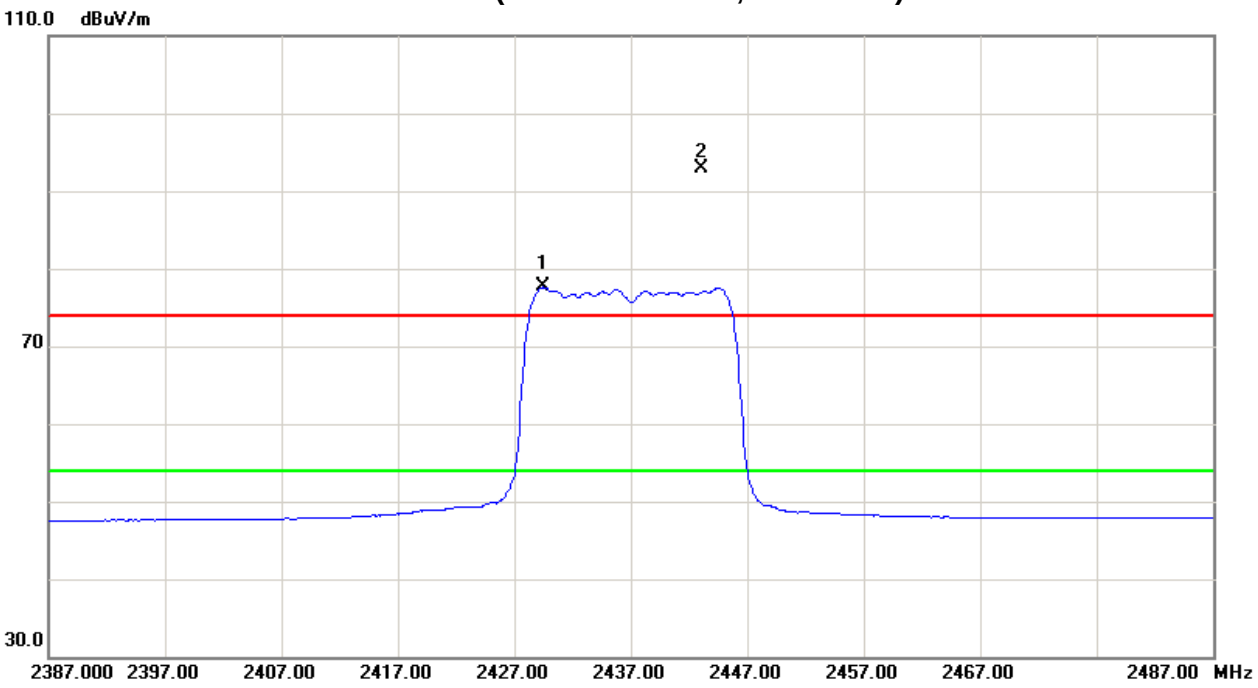
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

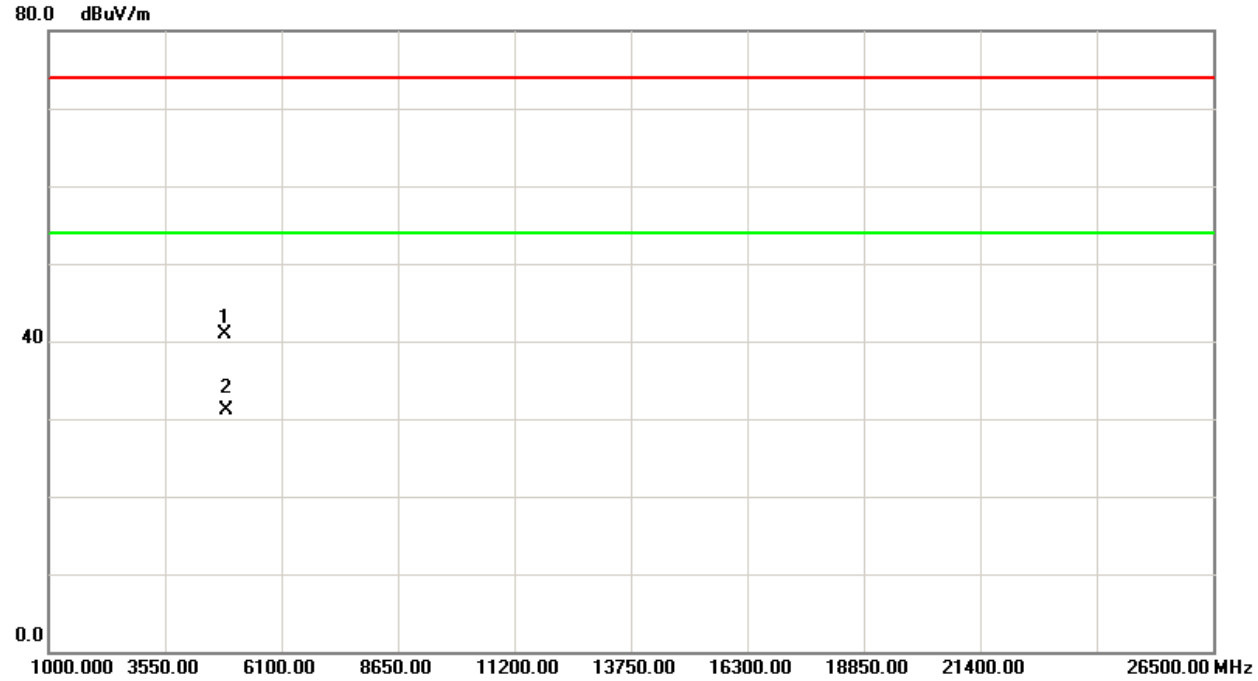
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2469.70	**V**	**56.94**	**41.44**	**34.33**	**91.27**	**75.77**			**X/F**
2483.50	V	23.39	13.60	34.37	57.76	47.97	74.00	54.00	X/E
4924.16	V	34.15	23.68	6.72	40.87	30.40	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

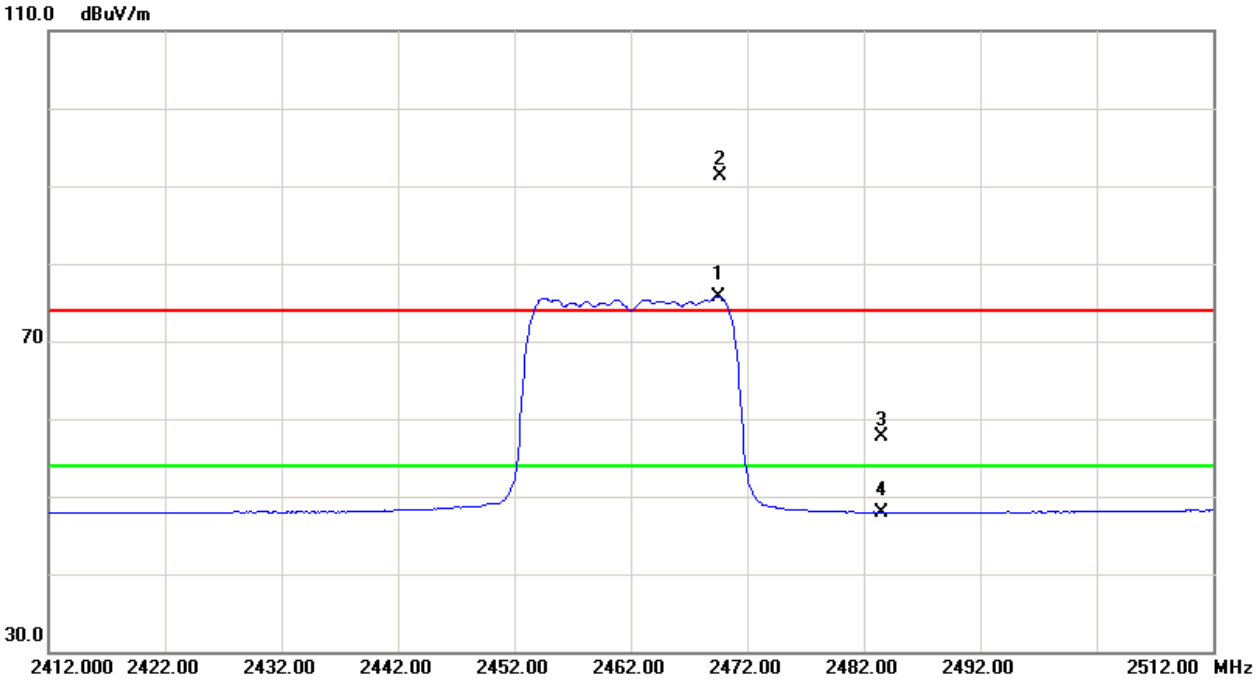
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

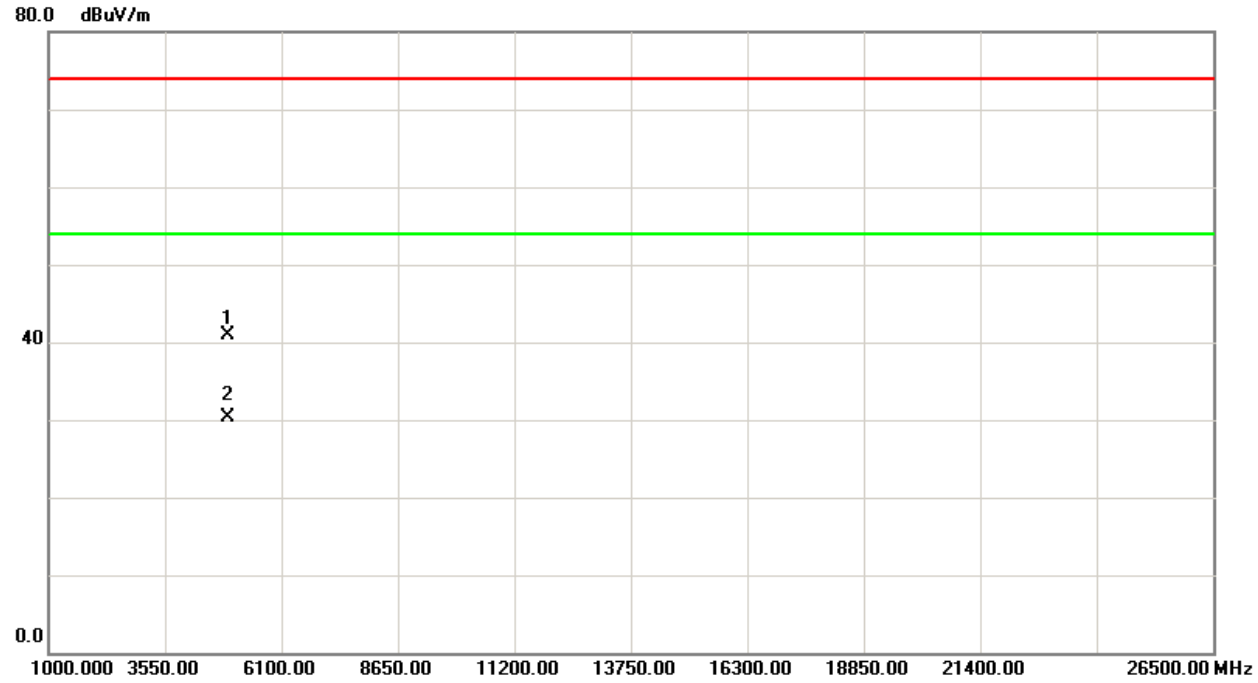
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH11 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2469.70	**H**	**59.45**	**43.67**	**34.33**	**93.78**	**78.00**			**X/F**
2483.50	H	24.13	13.67	34.37	58.50	48.04	74.00	54.00	X/E
4924.16	H	34.27	23.43	6.72	40.99	30.15	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

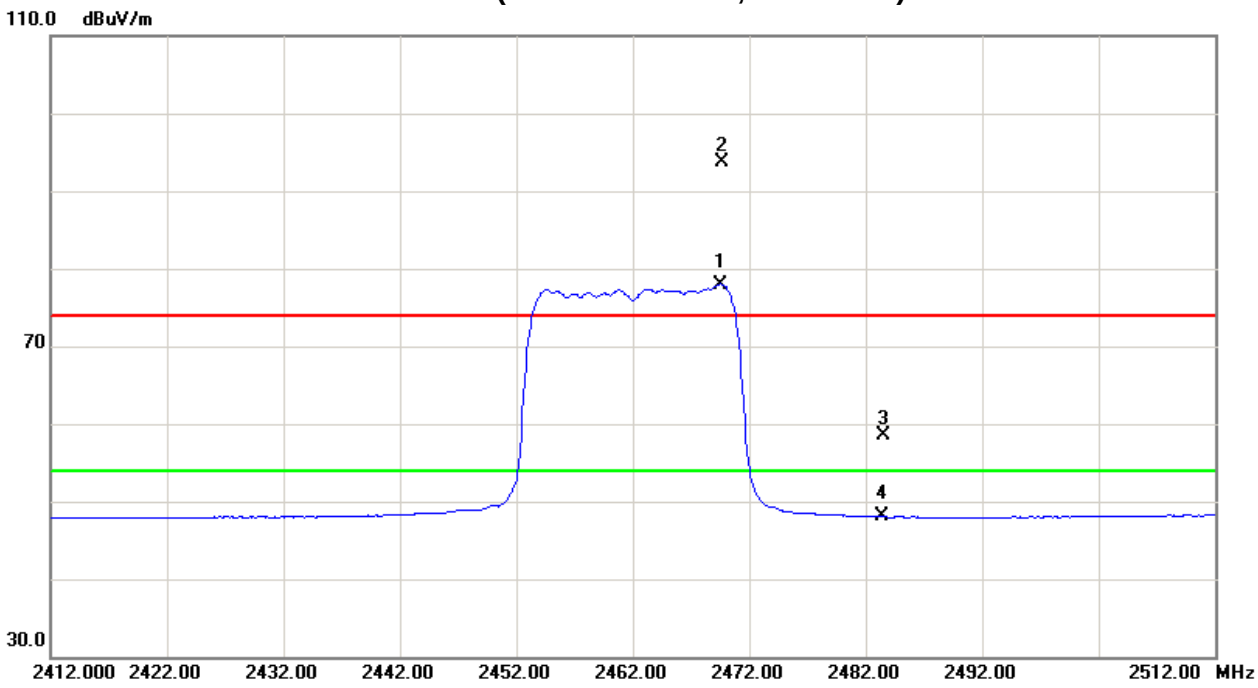
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

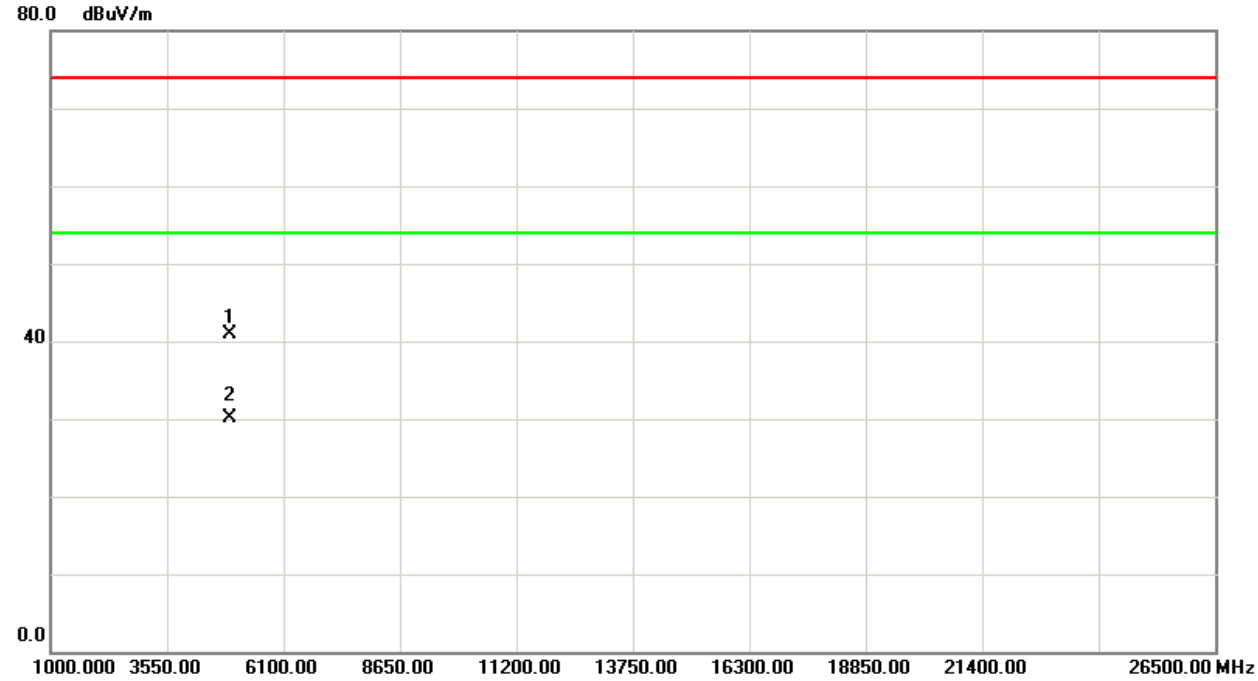
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH11 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	30.60	18.14	34.09	64.69	52.23	74.00	54.00	X/E
2417.00	**V**	**62.07**	**48.02**	**34.17**	**96.24**	**82.19**			**X/F**
4844.03	V	32.67	23.60	6.50	39.17	30.10	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

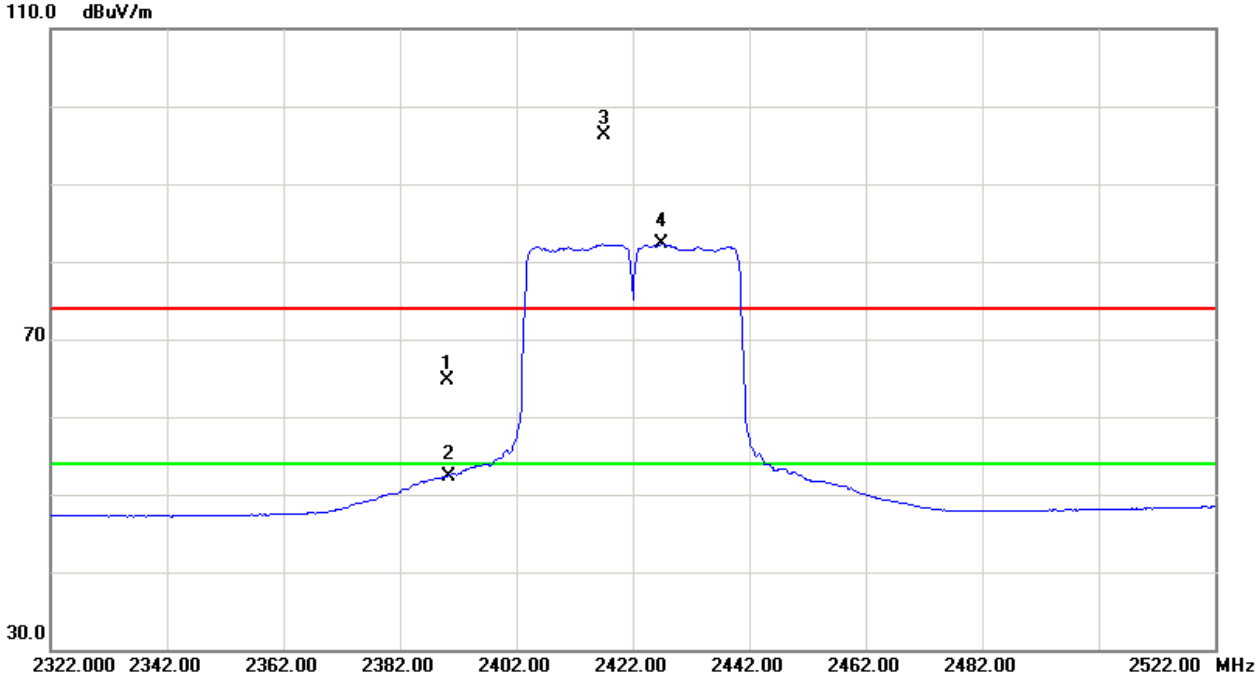
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

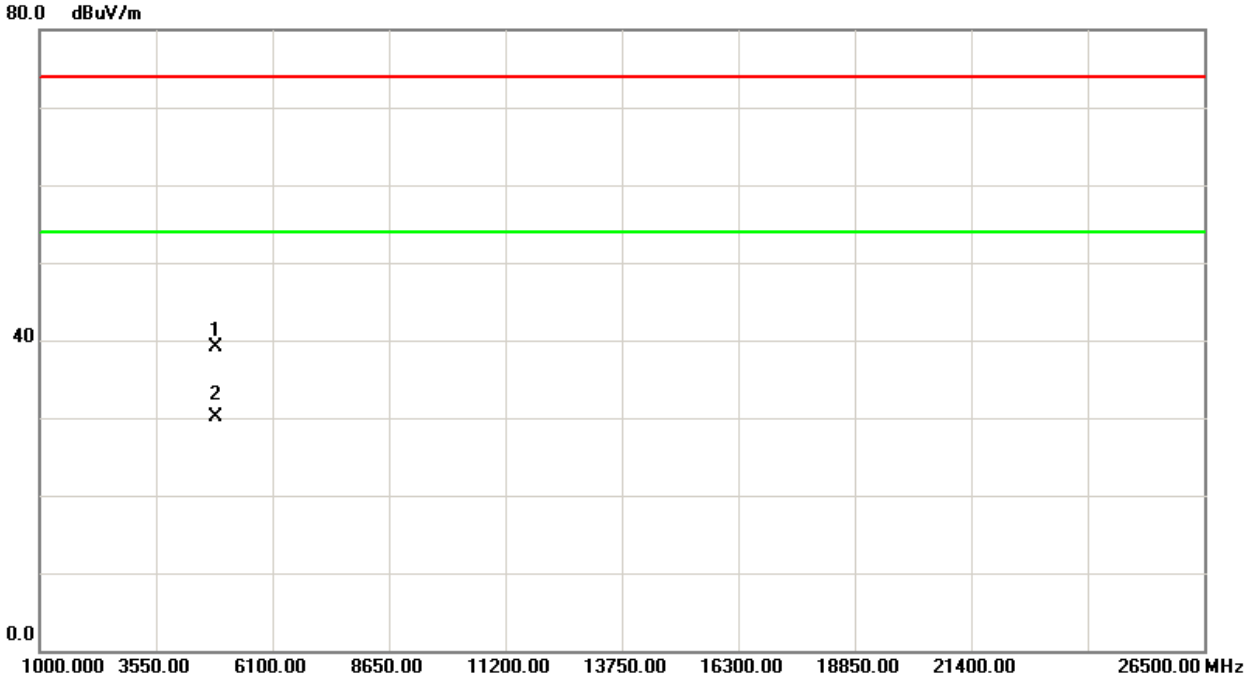
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH03 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	33.11	19.52	34.09	67.20	53.61	74.00	54.00	X/E
2438.40	**H**	**64.89**	**50.76**	**34.23**	**99.12**	**84.99**			**X/F**
4844.03	H	35.30	23.69	6.50	41.80	30.19	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

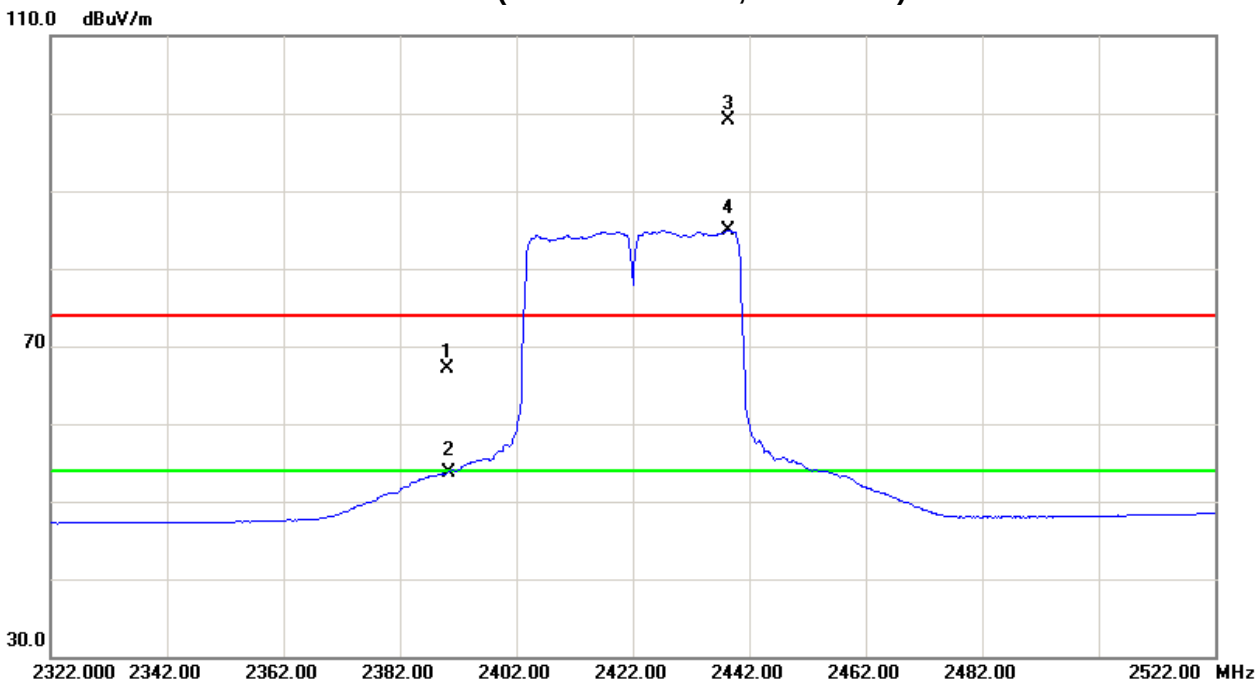
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

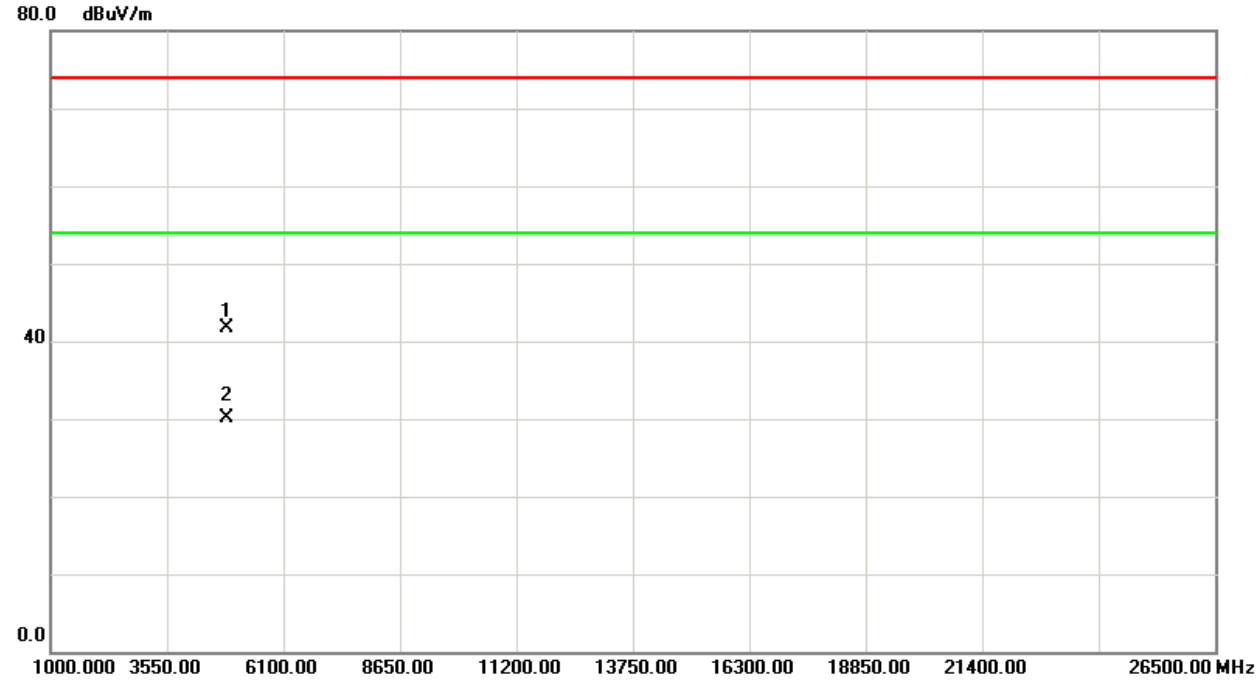
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH03 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2428.40	**V**	**54.90**	**41.42**	**34.21**	**89.11**	**75.63**			**X/F**
4874.12	V	33.36	23.53	6.58	39.94	30.11	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

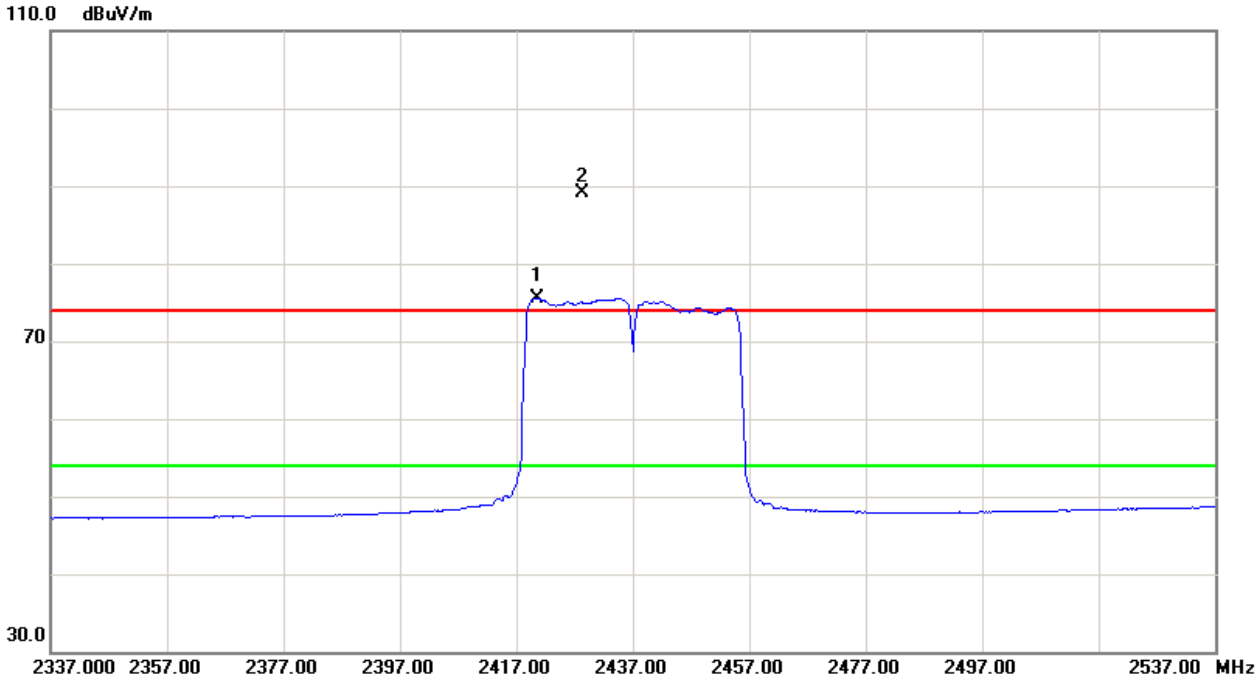
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

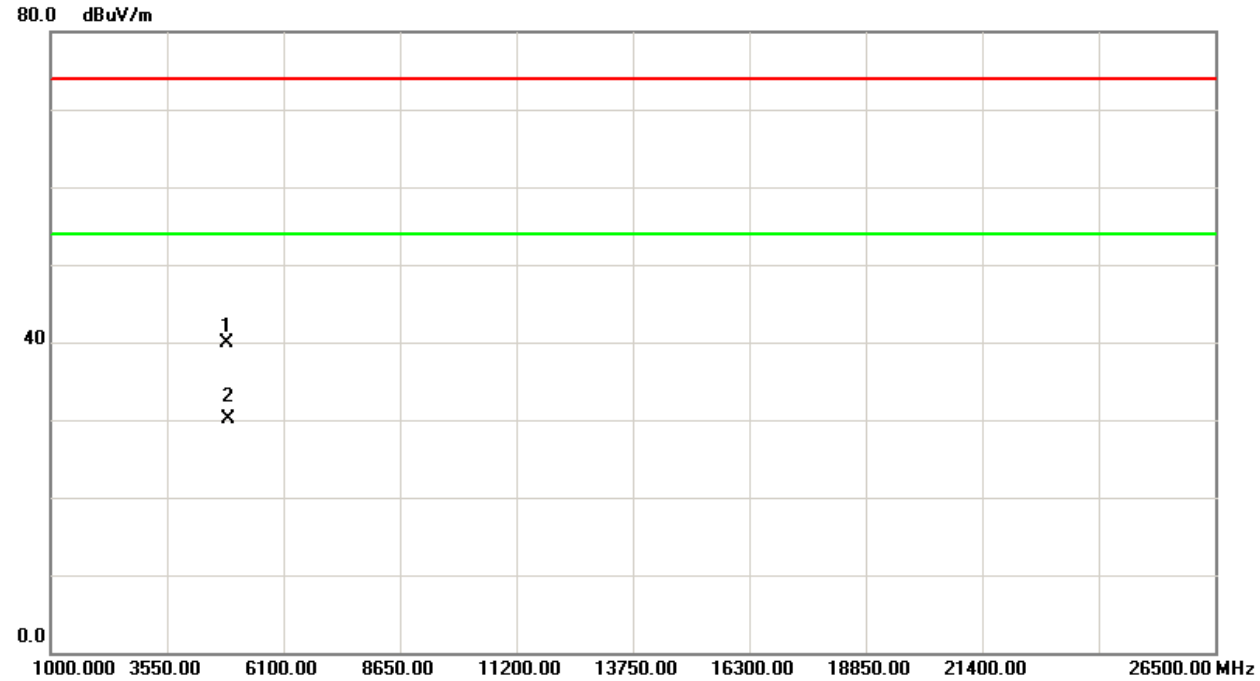
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2440.80	**H**	**59.31**	**45.44**	**34.25**	**93.56**	**79.69**			**X/F**
4874.12	H	34.27	24.44	6.58	40.85	31.02	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

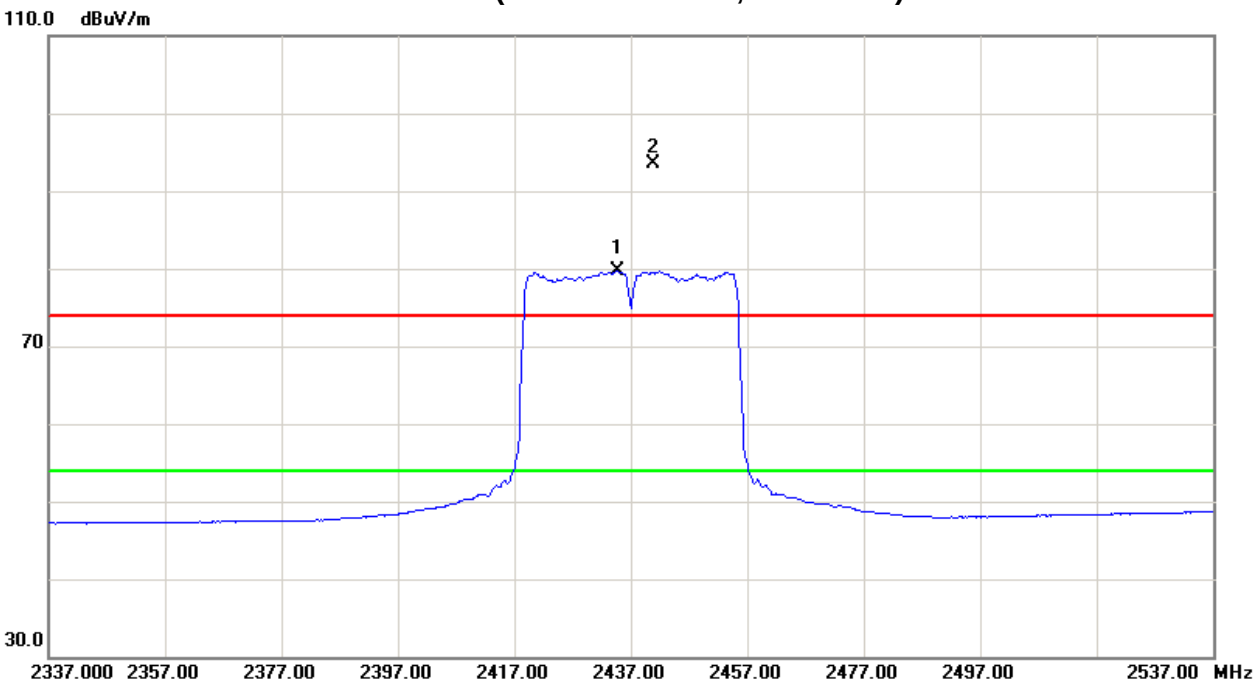
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

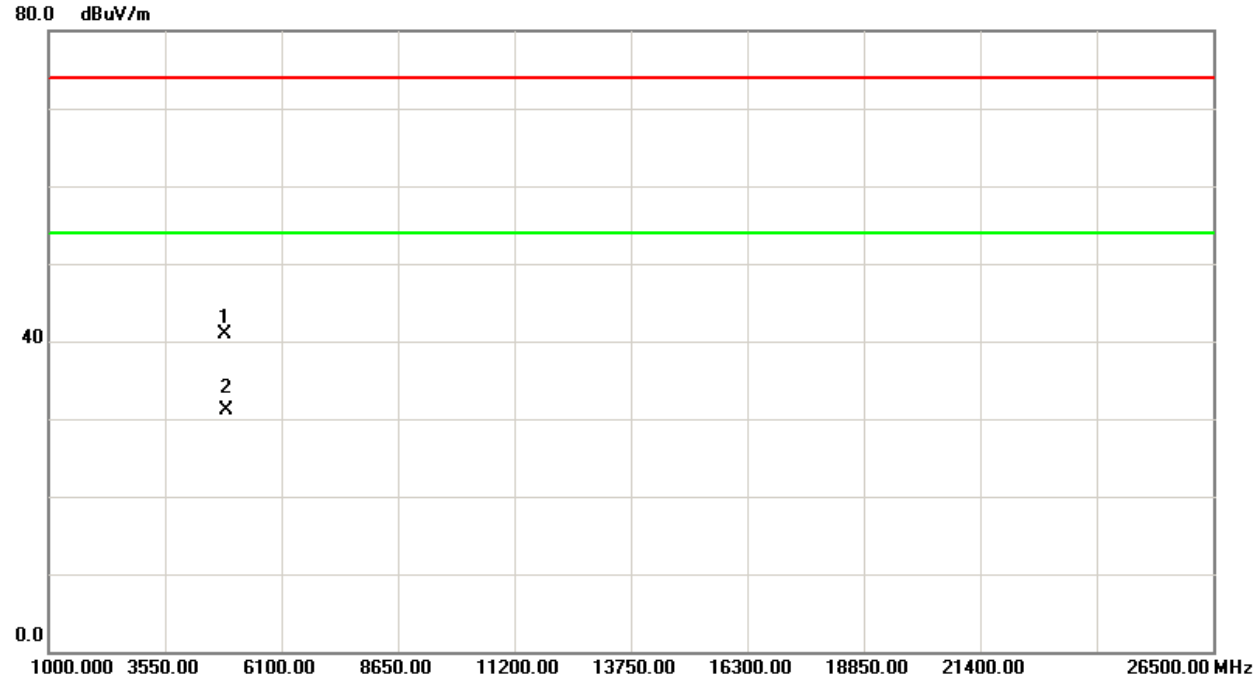
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH06 (Above 1000 MHz, Horizontal)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2447.80	**V**	**56.12**	**44.31**	**34.27**	**90.39**	**78.58**			**X/F**
2483.50	V	29.69	15.75	34.37	64.06	50.12	74.00	54.00	X/E
4904.03	V	34.27	23.43	6.67	40.94	30.10	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

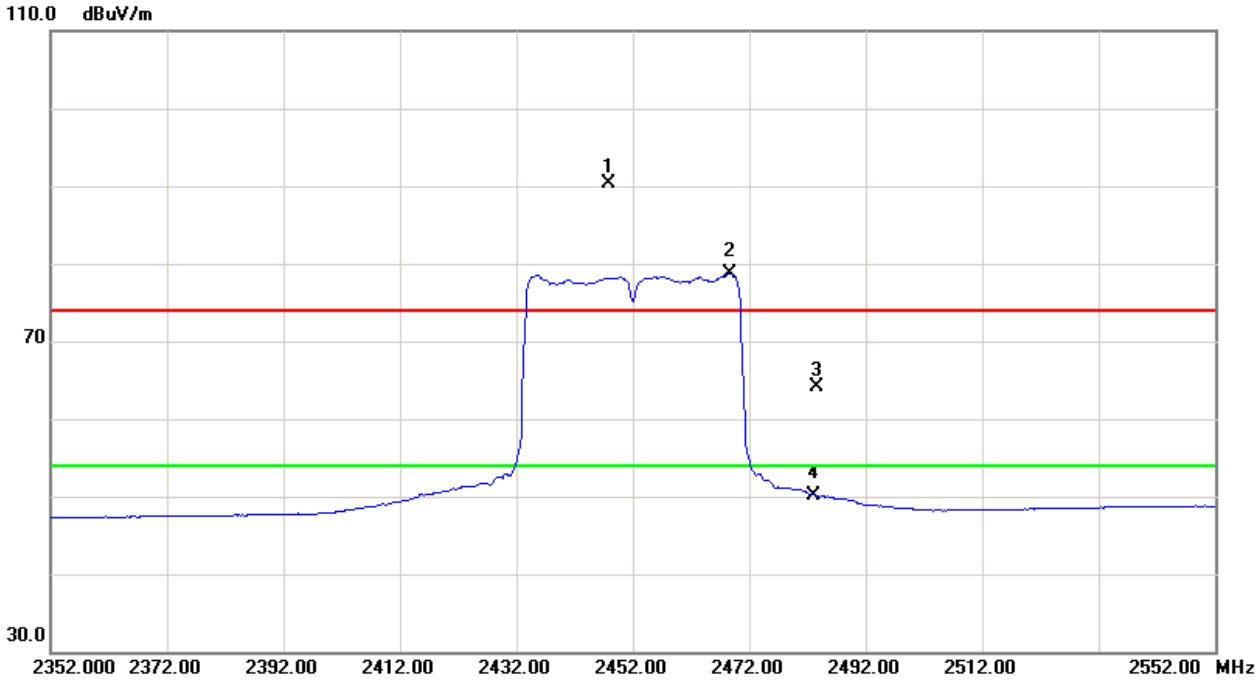
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

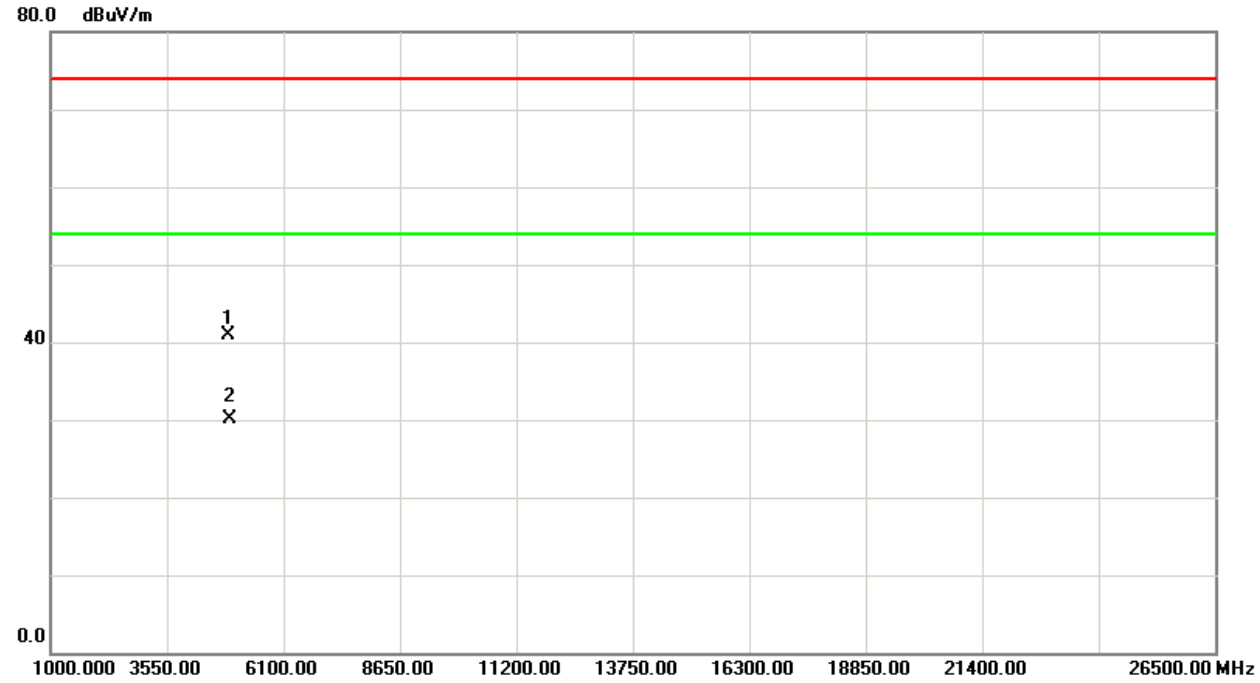
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH09 (Above 1000 MHz, Vertical)





EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2468.40	**H**	**59.63**	**47.30**	**34.33**	**93.96**	**81.63**			**X/F**
2483.50	H	33.11	17.06	34.37	67.48	51.43	74.00	54.00	X/E
4904.03	H	34.26	23.68	6.67	40.93	30.35	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .

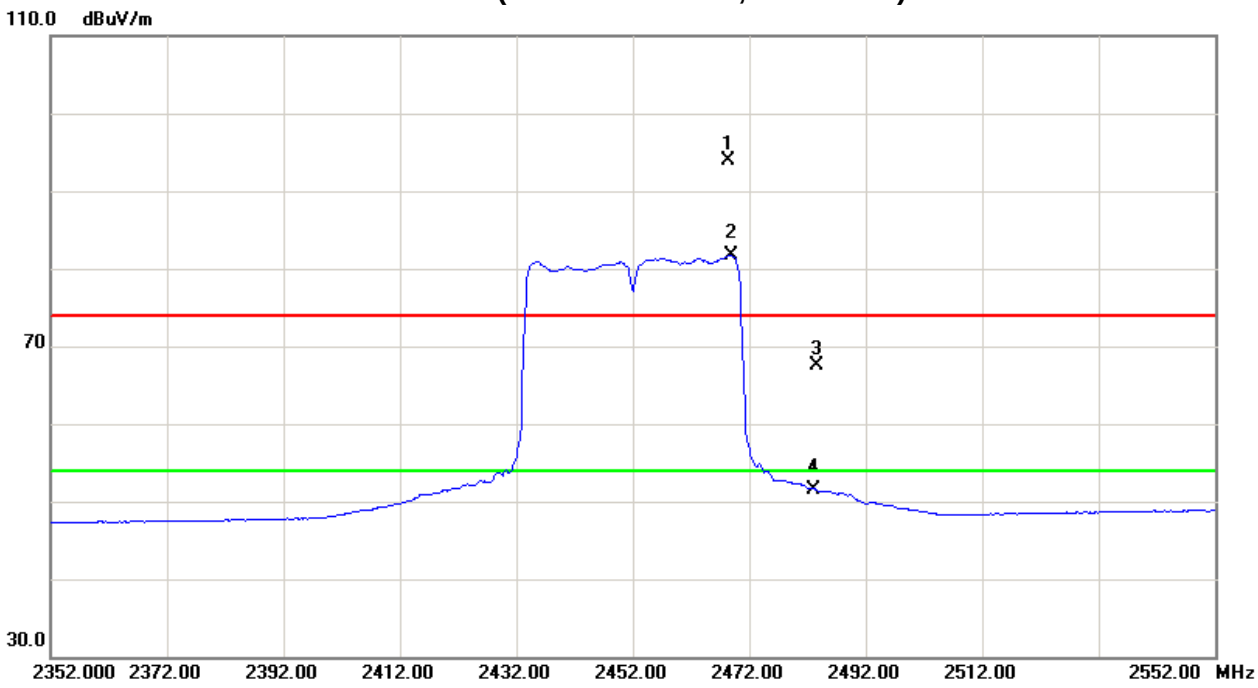
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

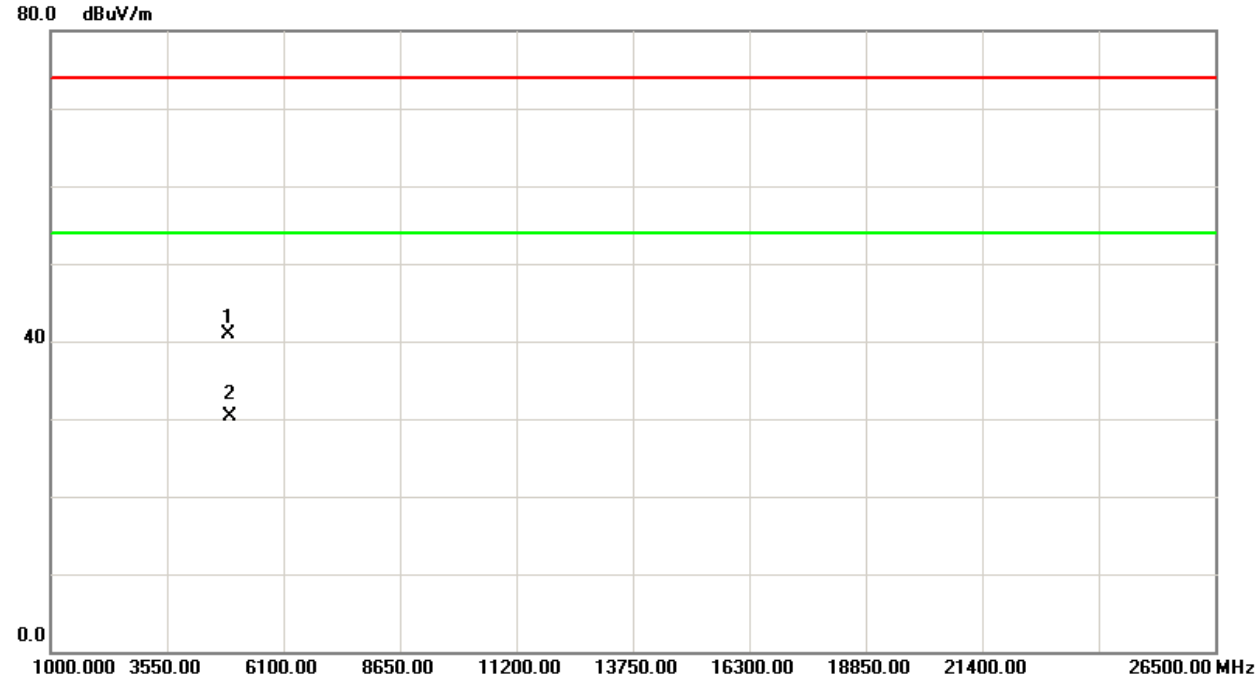
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH09 (Above 1000 MHz, Horizontal)





5. BANDWIDTH TEST

5.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-210			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2) RSS-GEN section 4.6.1 RSS-210 Annex 8 (A8.2(a))	Bandwidth	2400-2483.5	PASS

5.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov. 09, 2014

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

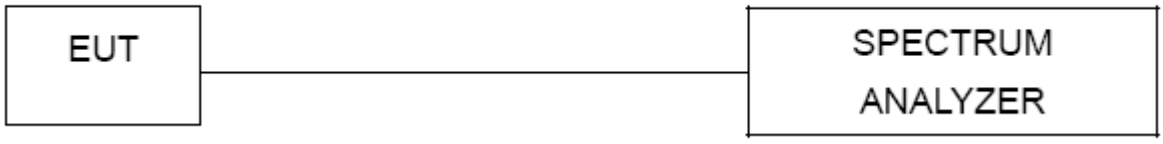
5.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

5.1.3 DEVIATION FROM STANDARD

No deviation.

5.1.4 TEST SETUP



5.1.5 EUT OPERATION CONDITIONS

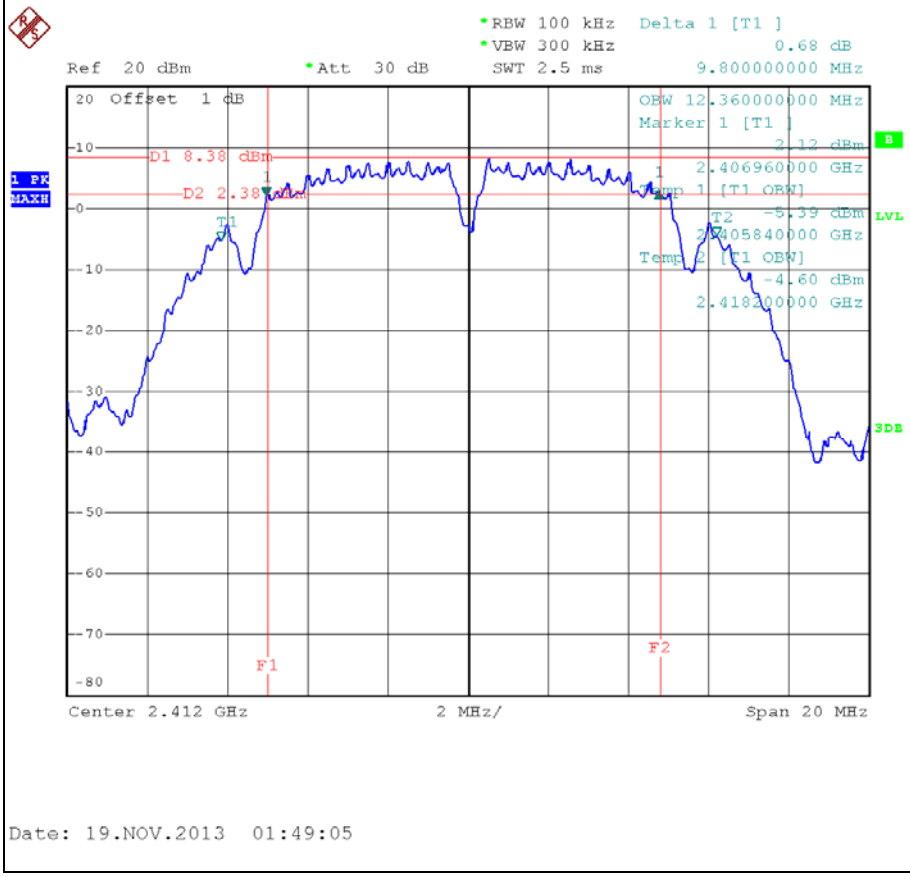
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.6 TEST RESULTS

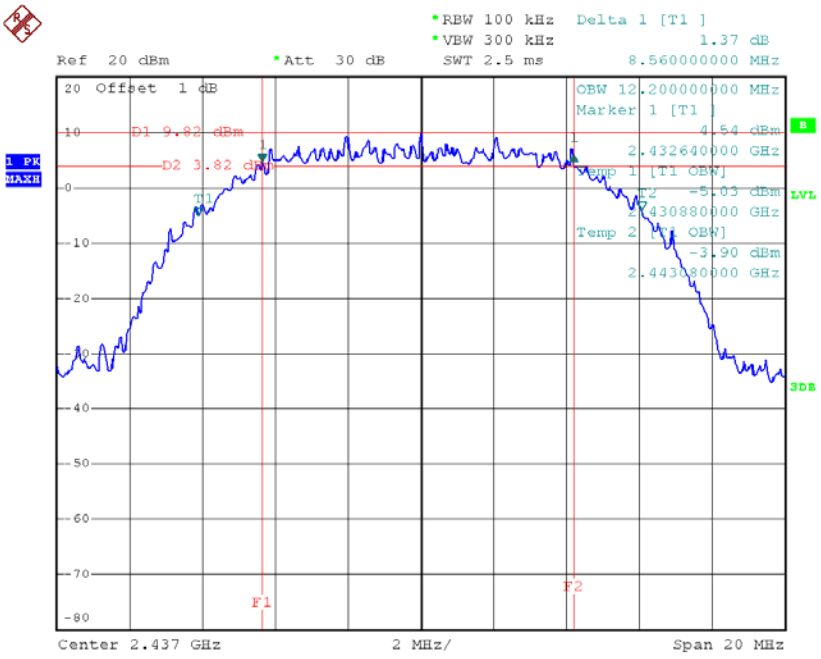
EUT:	Multi-mode WiFi Storage	Model Name. :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% OBW (MHz)	Result
CH01	2412	9.80	12.36	PASS
CH06	2437	8.56	12.20	PASS
CH11	2462	10.04	12.32	PASS

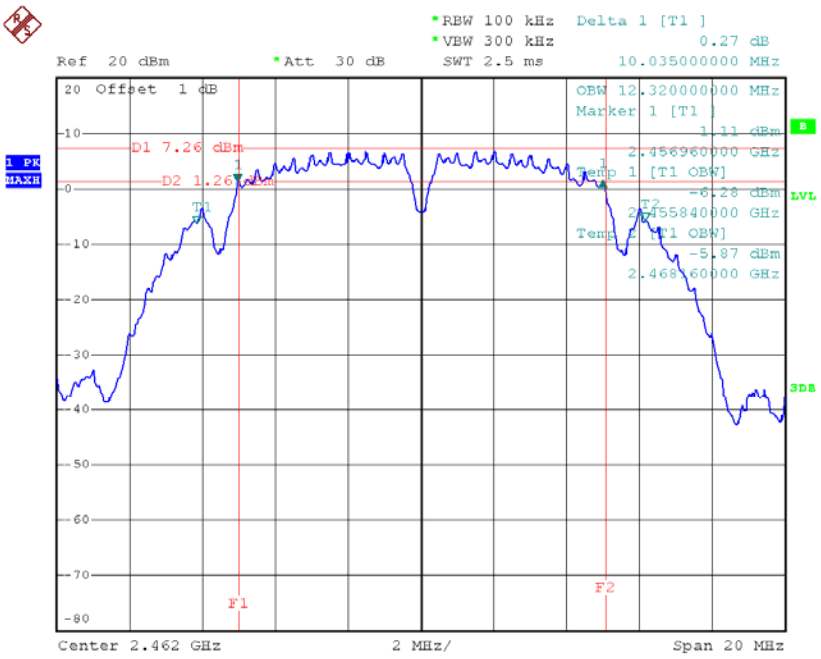
TX CH 01



TX CH 06



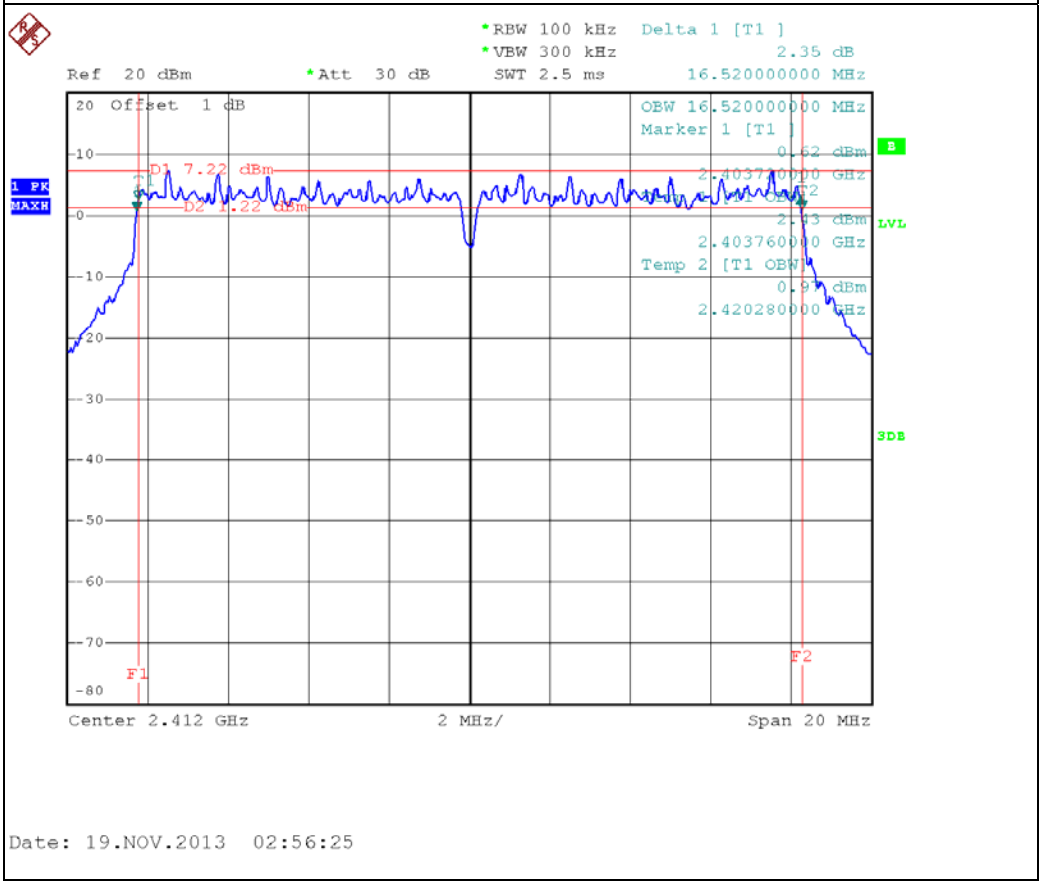
TX CH 11



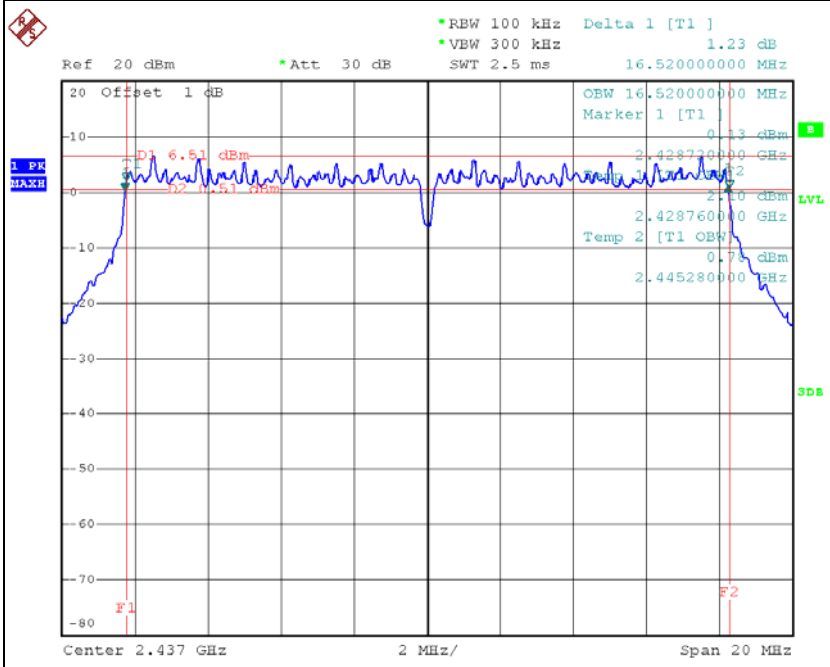
EUT:	Multi-mode WiFi Storage	Model Name. :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% OBW (MHz)	Result
CH01	2412	16.52	16.52	PASS
CH06	2437	16.52	16.52	PASS
CH11	2462	16.52	16.48	PASS

TX CH 01

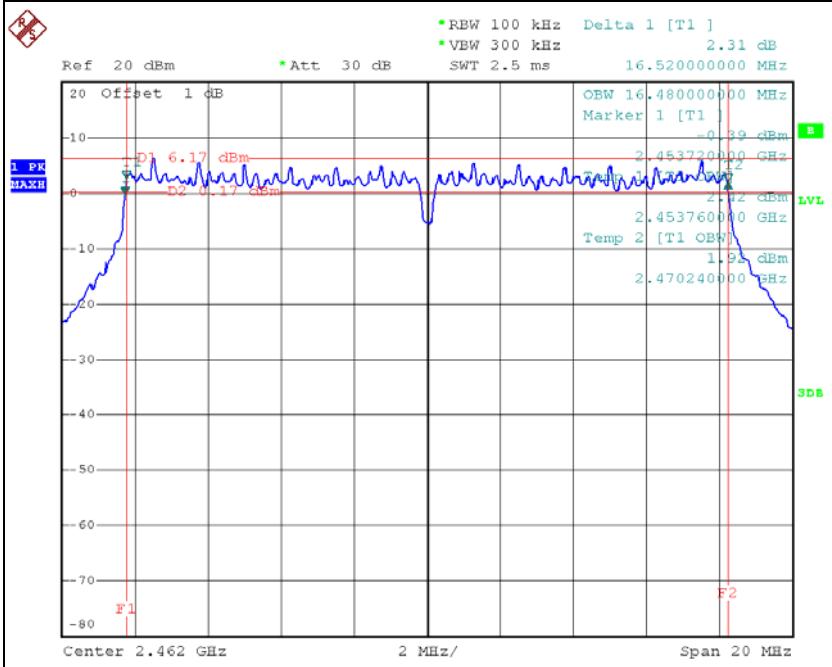


TX CH 06



Date: 19.NOV.2013 02:46:48

TX CH 11

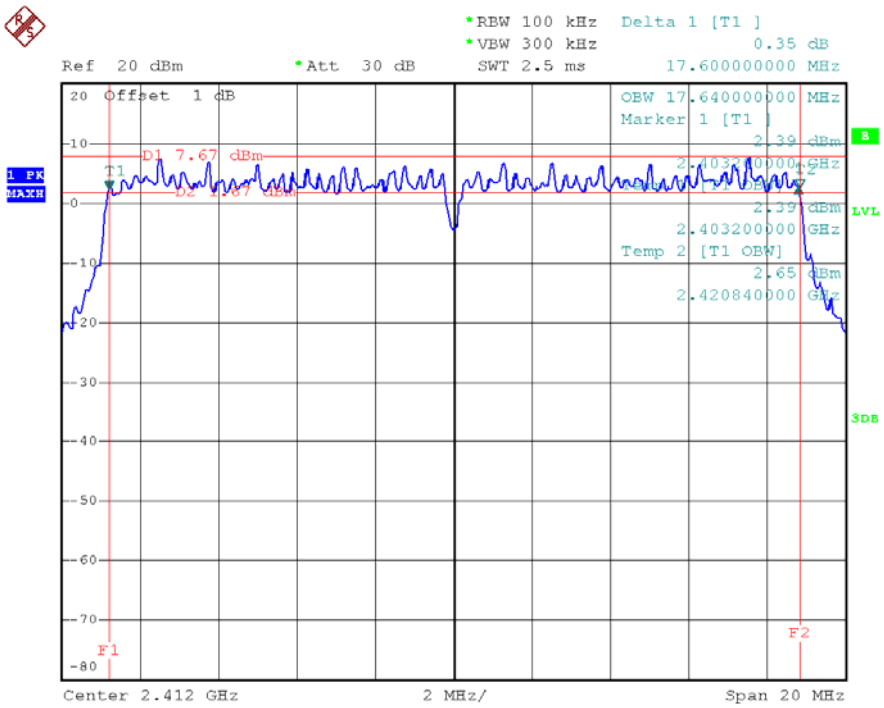


Date: 19.NOV.2013 02:34:08

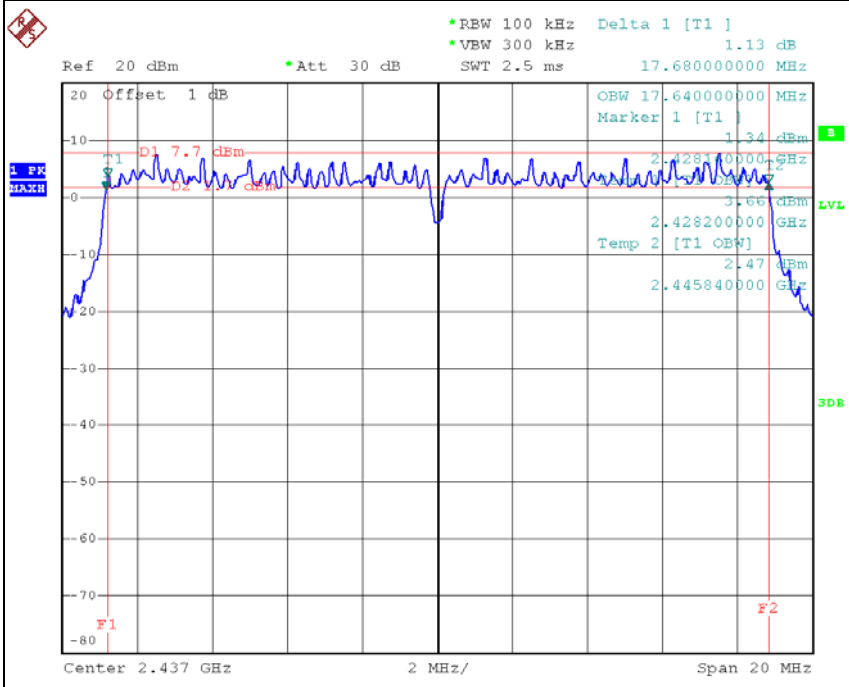
EUT:	Multi-mode WiFi Storage	Model Name. :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 0		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% OBW (MHz)	Result
CH01	2412	17.60	17.64	PASS
CH06	2437	17.68	17.64	PASS
CH11	2462	17.68	17.64	PASS

TX CH 01

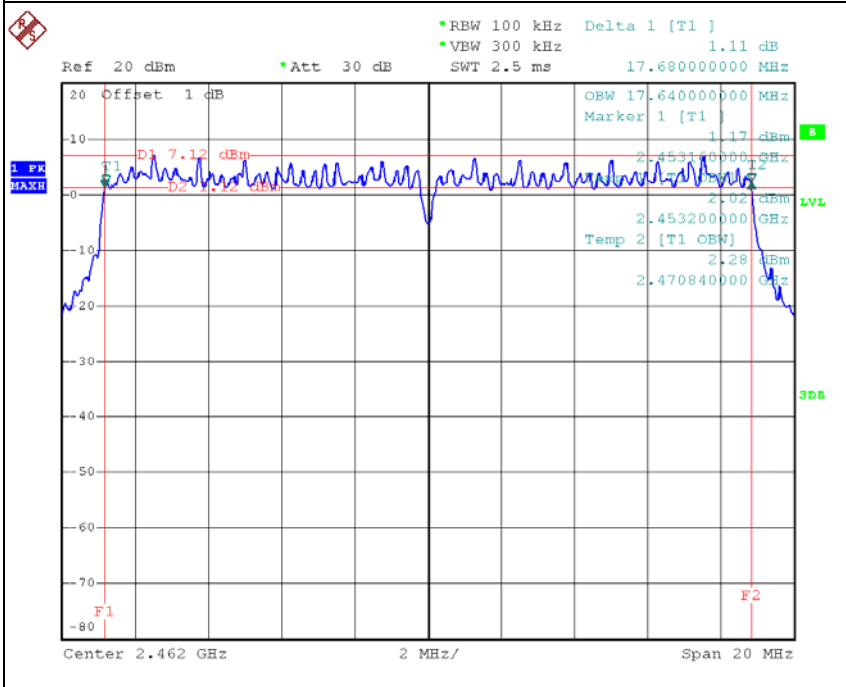


TX CH 06



Date: 19.NOV.2013 04:51:02

TX CH 11

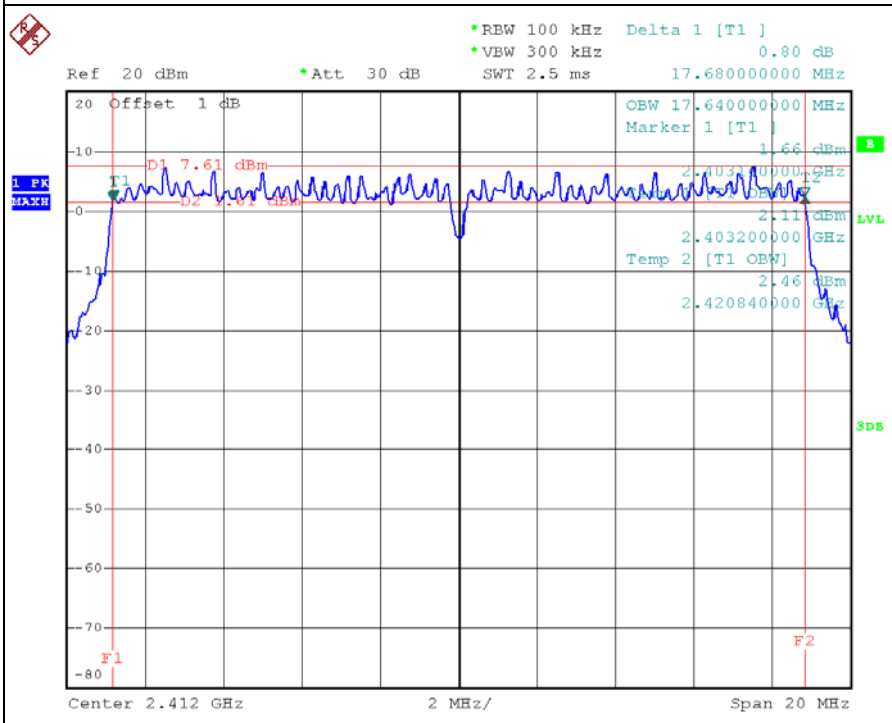


Date: 19.NOV.2013 05:02:12

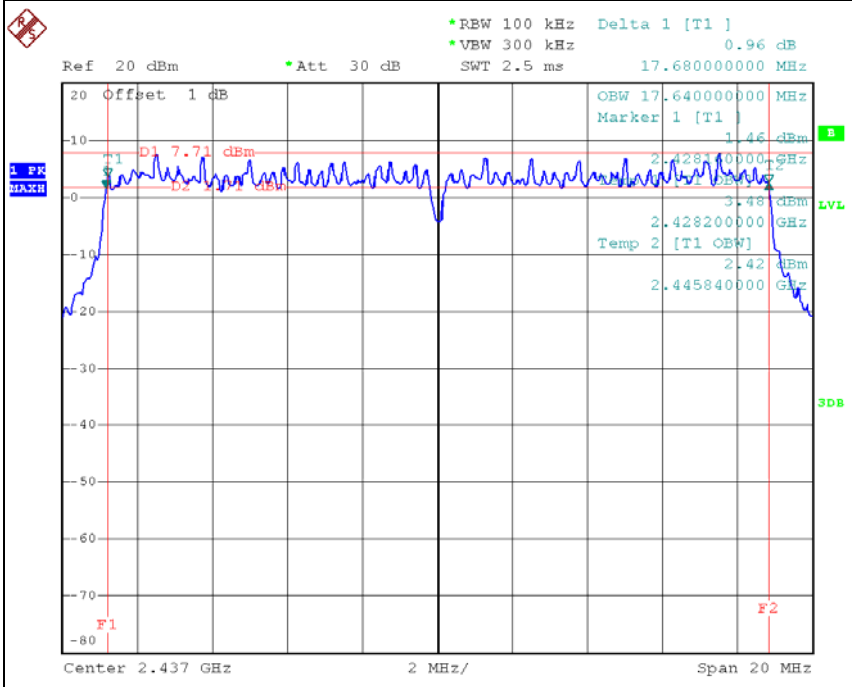
EUT:	Multi-mode WiFi Storage	Model Name. :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% OBW (MHz)	Result
CH01	2412	17.68	17.64	PASS
CH06	2437	17.68	17.64	PASS
CH11	2462	17.68	17.60	PASS

TX CH 01

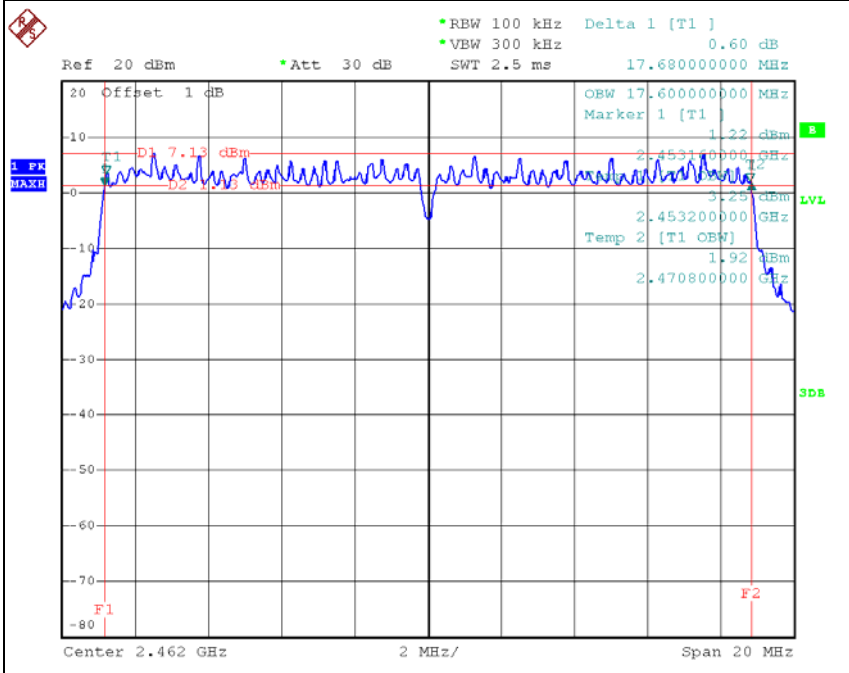


TX CH 06



Date: 19.NOV.2013 04:52:52

TX CH 11

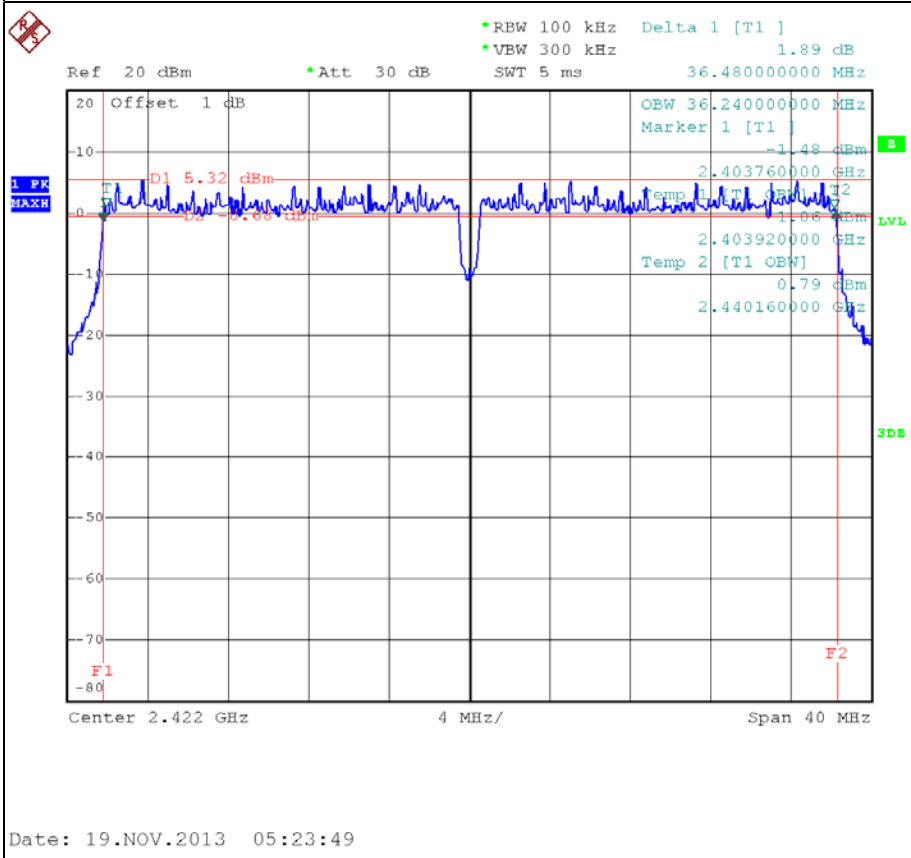


Date: 19.NOV.2013 05:03:44

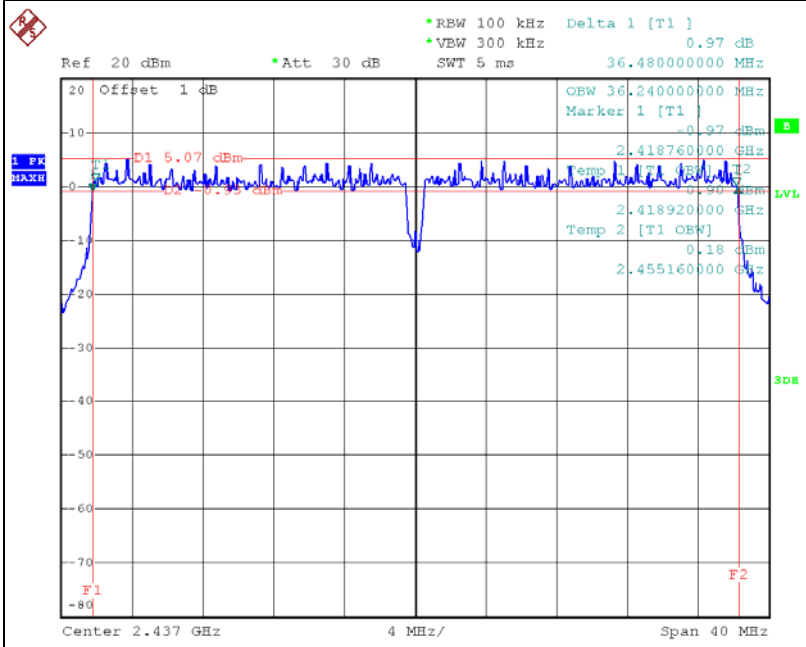
EUT:	Multi-mode WiFi Storage	Model Name. :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 0		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% OBW (MHz)	Result
CH03	2422	36.48	36.24	PASS
CH06	2437	36.48	36.24	PASS
CH09	2452	36.48	36.24	PASS

TX CH 03

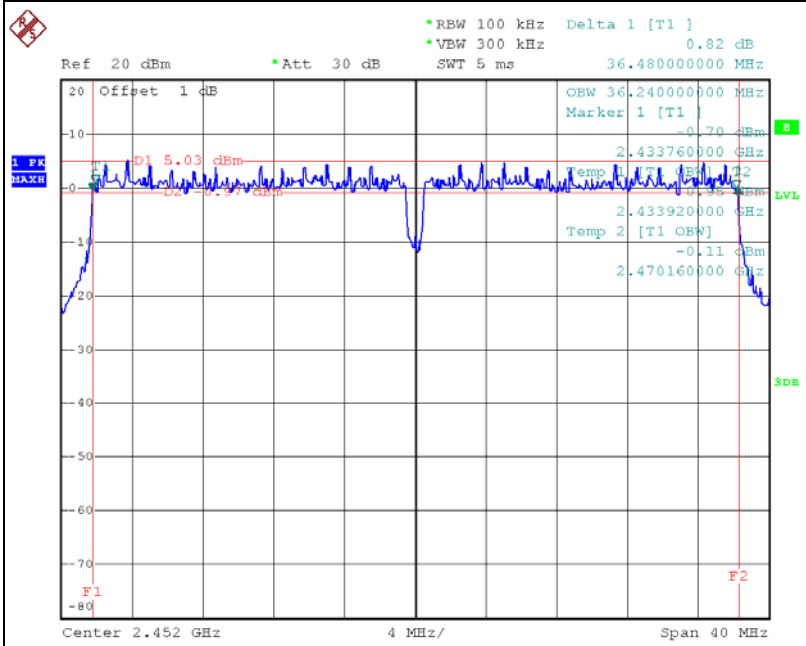


TX CH 06



Date: 19.NOV.2013 05:35:50

TX CH 09

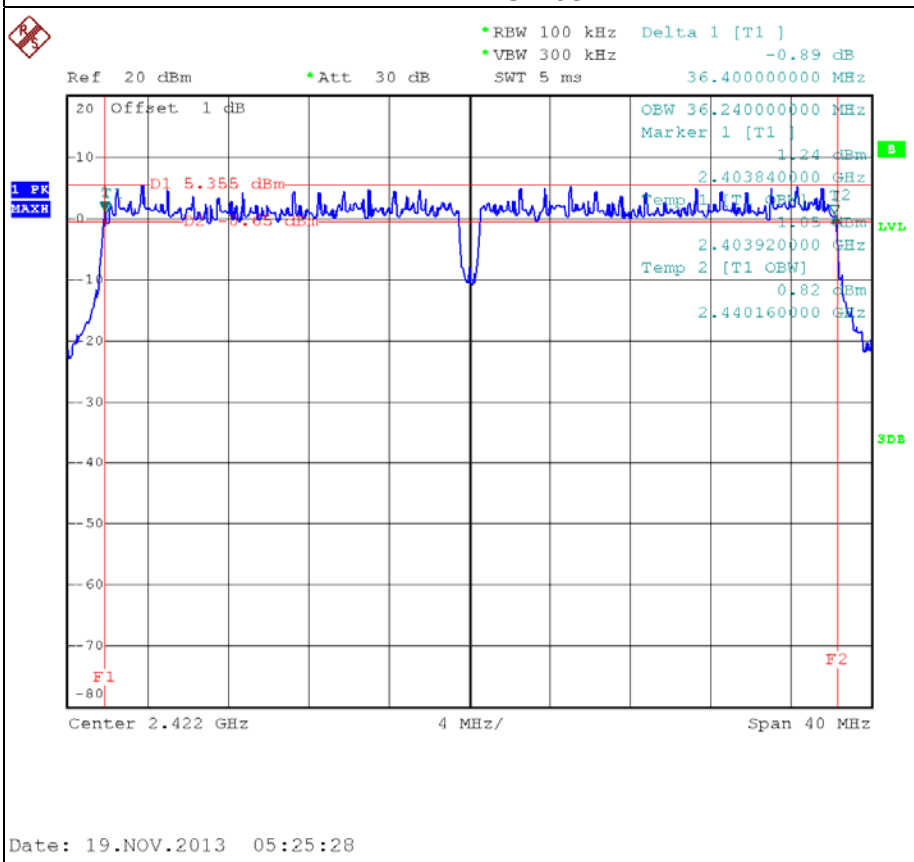


Date: 19.NOV.2013 05:43:37

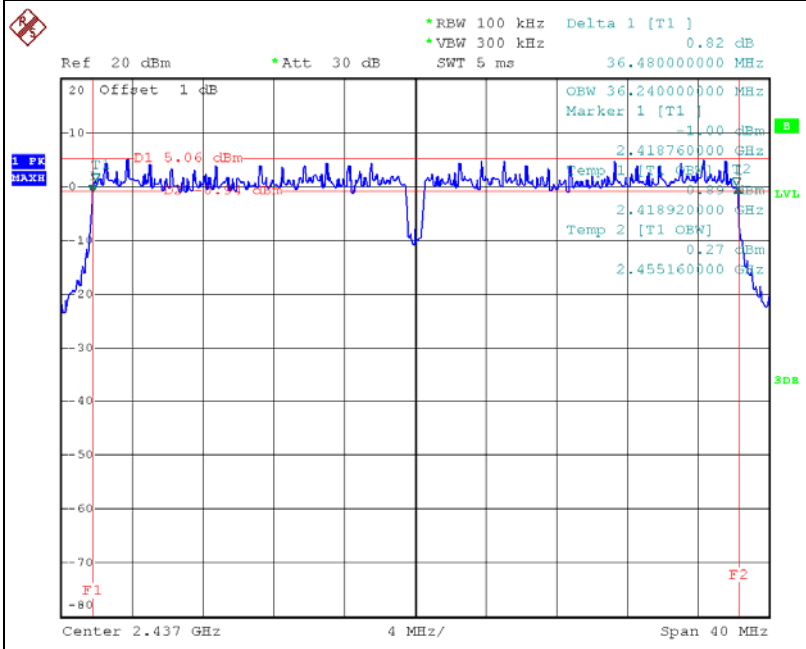
EUT:	Multi-mode WiFi Storage	Model Name. :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% OBW (MHz)	Result
CH03	2422	36.40	36.24	PASS
CH06	2437	36.40	36.24	PASS
CH09	2452	36.40	36.24	PASS

TX CH 03

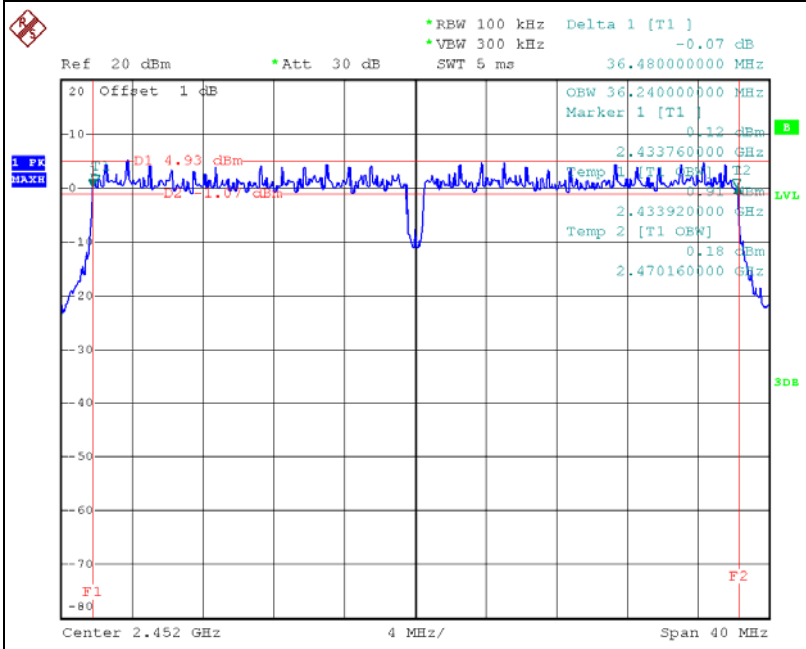


TX CH 06



Date: 19.NOV.2013 05:37:16

TX CH 09



Date: 19.NOV.2013 05:45:17

6. MAXIMUM OUTPUT POWER TEST

6.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C/ RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3) RSS-210 Annex 8.4(4)	Maximum Output Power	1 Watt or 30dBm	2400-2483.5	PASS

6.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Next Calibration
1	P-series Power meter	Agilent	N1911A	MY45100473	Apr.25.2014
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Apr.25.2014

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

6.1.2 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
b. The maximum peak conducted output power was performed in accordance with method 9.1.3 of FCC KDB 558074

6.1.3 DEVIATION FROM STANDARD

No deviation.

6.1.4 TEST SETUP

6.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.
Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.

6.1.6 TEST RESULTS

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2412	24.31	13.64	30	1
2437	24.37	14.01	30	1
2462	24.36	13.87	30	1

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2412	24.21	13.90	30	1
2437	24.28	14.02	30	1
2462	24.12	13.80	30	1

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11		

	ANT 0			
Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2412	24.31	13.55	30	1
2437	24.32	13.56	30	1
2462	24.22	13.42	30	1

	ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2412	24.35	13.46	30	1
2437	24.36	13.59	30	1
2462	24.26	13.55	30	1

	ANT 0 + ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2412	27.34	16.52	30	1
2437	27.35	16.59	30	1
2462	27.25	16.50	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09		

	ANT 0			
Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2422	24.39	13.68	30	1
2437	24.38	13.64	30	1
2452	24.38	13.67	30	1

	ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2422	24.41	13.69	30	1
2437	24.39	13.64	30	1
2452	24.38	13.67	30	1

	ANT 0 + ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	AVG Output Power (dBm)	Limit (dBm)	Limit (W)
2422	27.41	16.70	30	1
2437	27.40	16.65	30	1
2452	27.39	16.68	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 Applied procedures / limit

20dBc in any 100KHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) & RSS-210 section 2.2 & Annex 8 (A8.5), then the 15.209(a) & RSS-GEN limit in the table below has to be followed.

Frequency (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

7.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov. 09, 2014

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

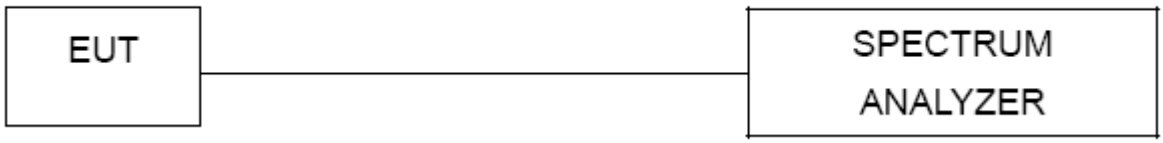
7.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

7.1.3 DEVIATION FROM STANDARD

No deviation.

7.1.4 TEST SETUP



7.1.5 EUT OPERATION CONDITIONS

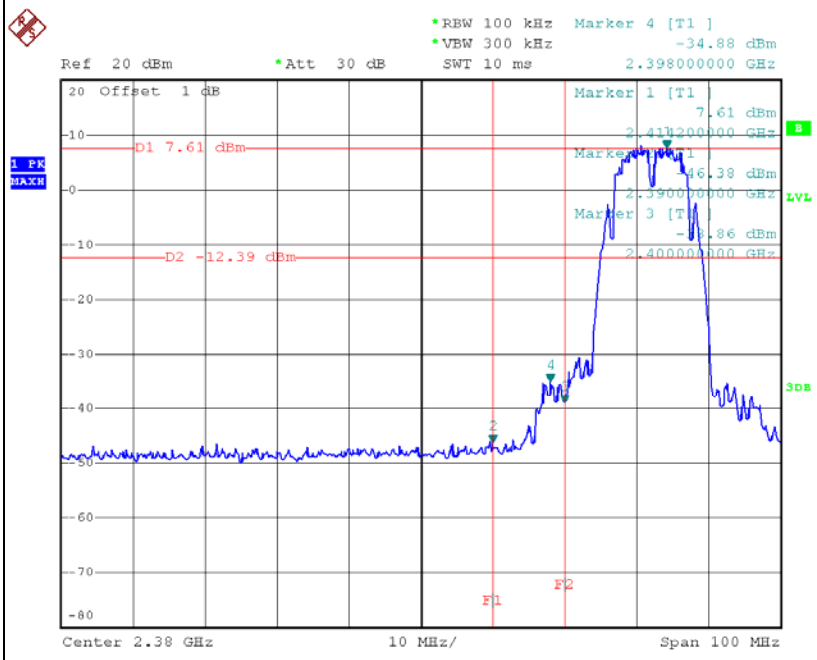
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.6 TEST RESULTS

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06 , CH11		

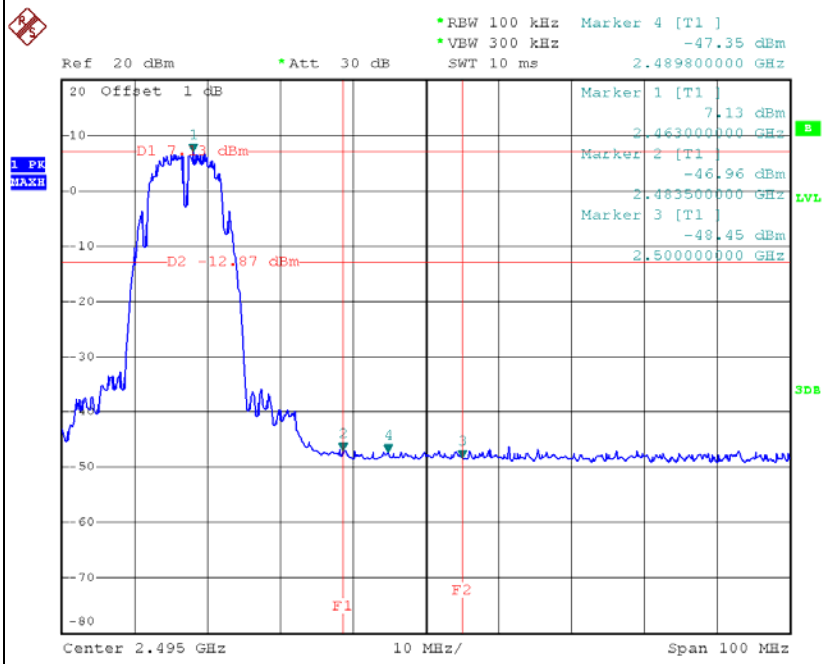
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.00	-34.88	2483.50	-46.96
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

TX B mode CH01



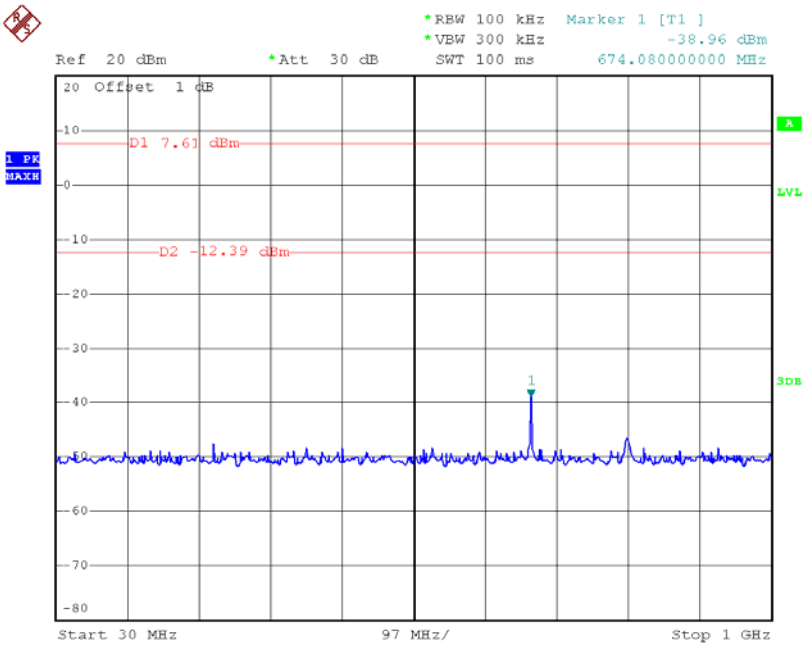
Date: 19.NOV.2013 06:07:44

TX B mode CH11



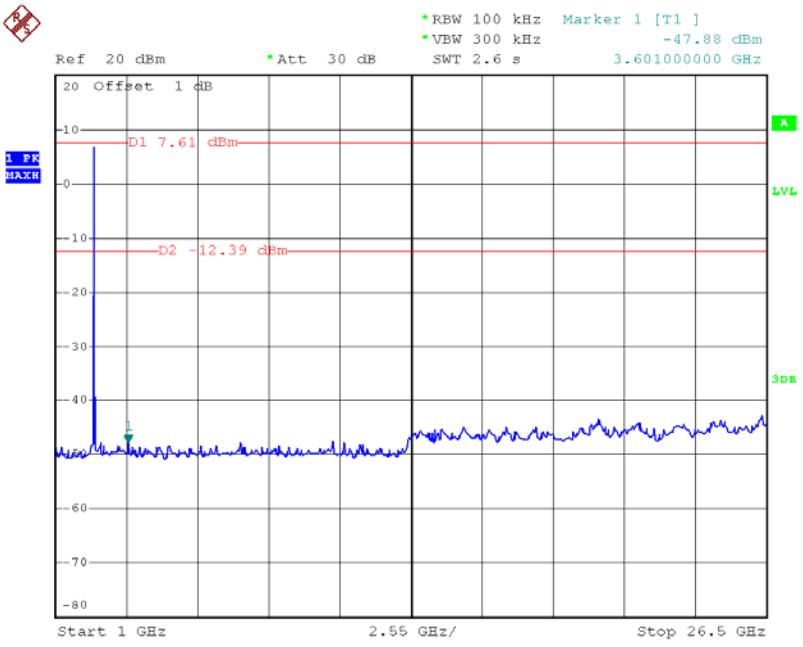
Date: 19.NOV.2013 02:22:31

TX B mode CH01 (30M~1000MHz)



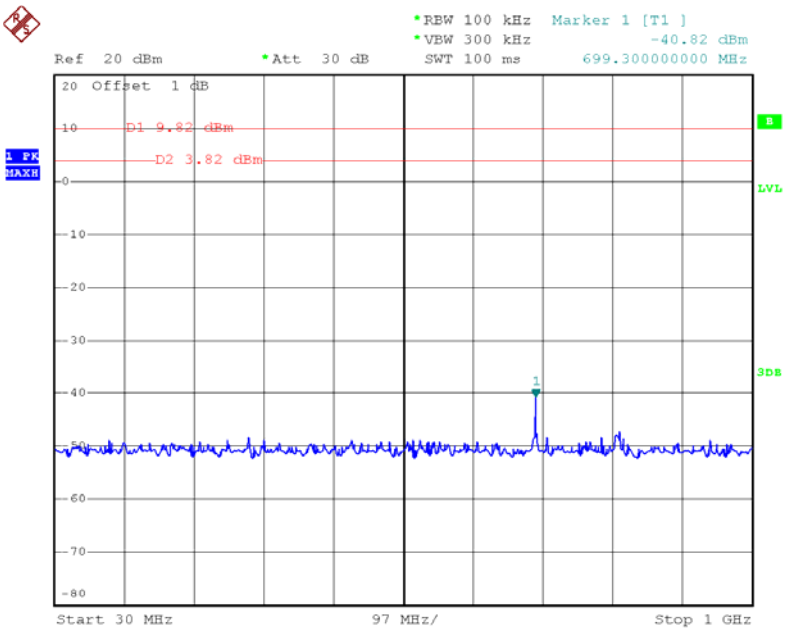
Date: 19.NOV.2013 01:42:41

TX B mode CH01 (1000MHz~10th Harmonic)

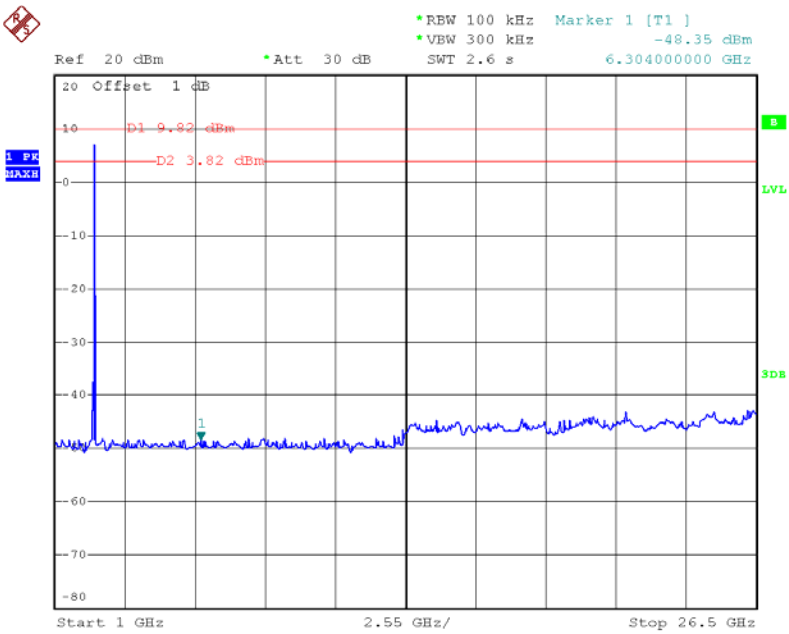


Date: 19.NOV.2013 01:42:07

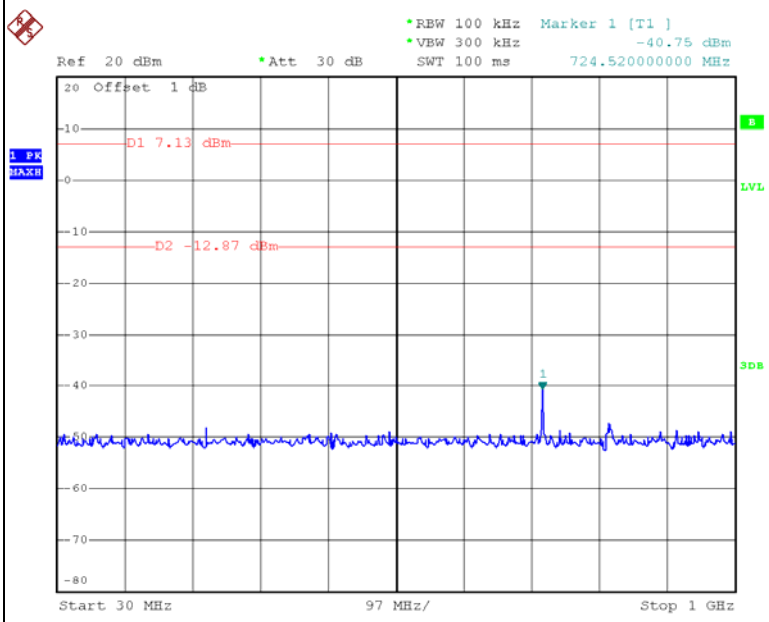
TX B mode CH06 (30M~1000MHz)



TX B mode CH06 (1000MHz~10th Harmonic)

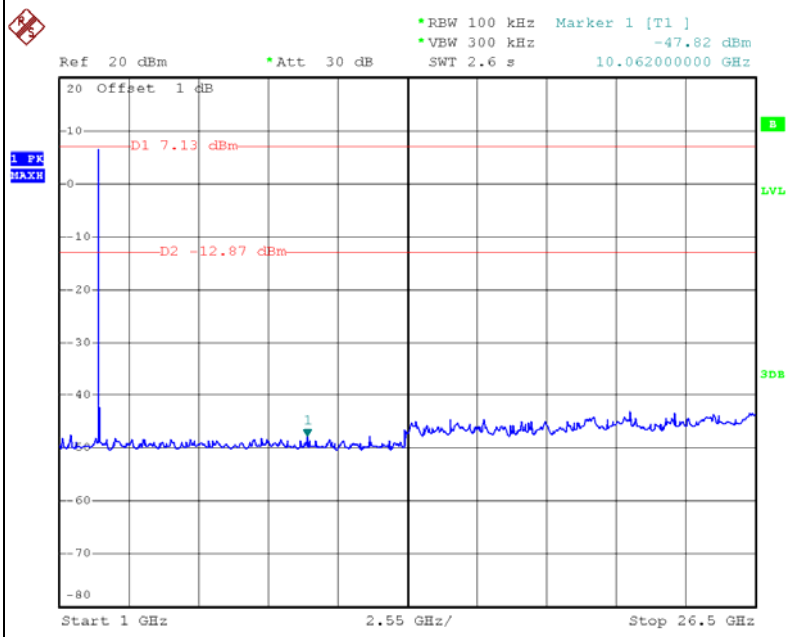


TX B mode CH11 (30M~1000MHz)



Date: 19.NOV.2013 02:23:41

TX B mode CH11 (1000MHz~10th Harmonic)

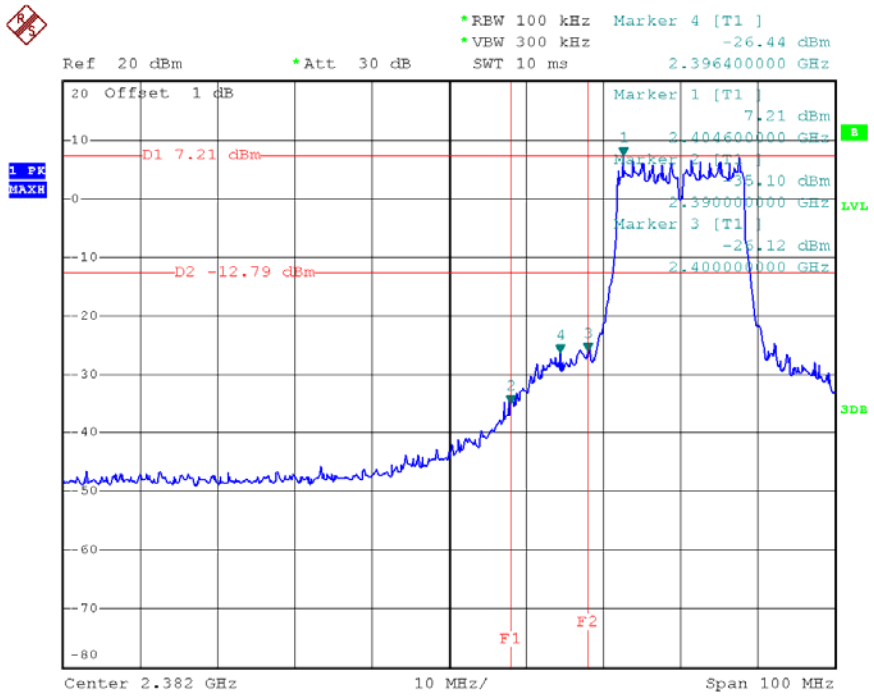


Date: 19.NOV.2013 02:23:24

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE / CH01, CH06 , CH11		

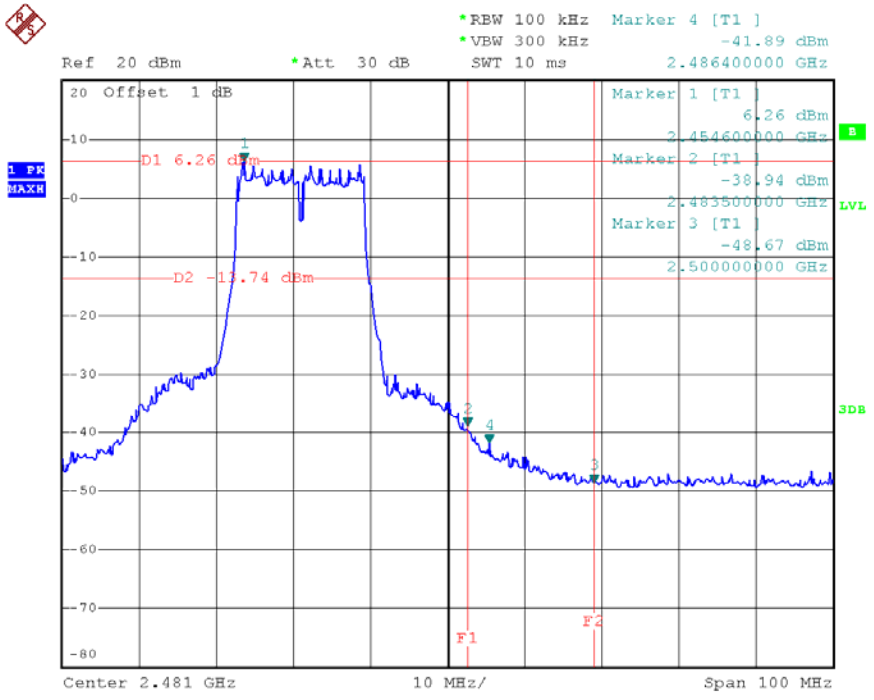
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-26.12	2483.50	-38.94
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

TX G mode CH01



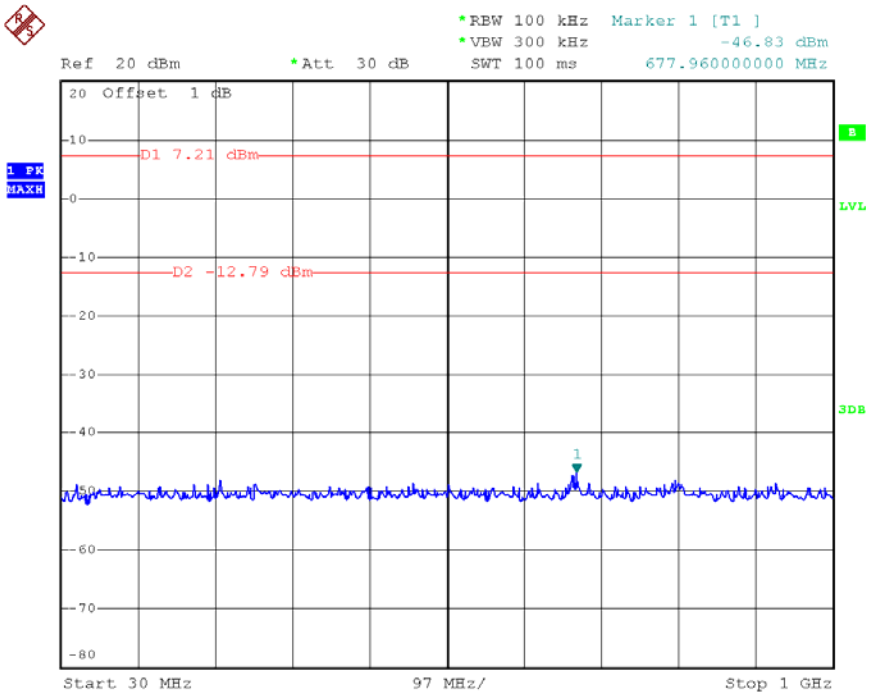
Date: 19.NOV.2013 03:00:54

TX G mode CH11



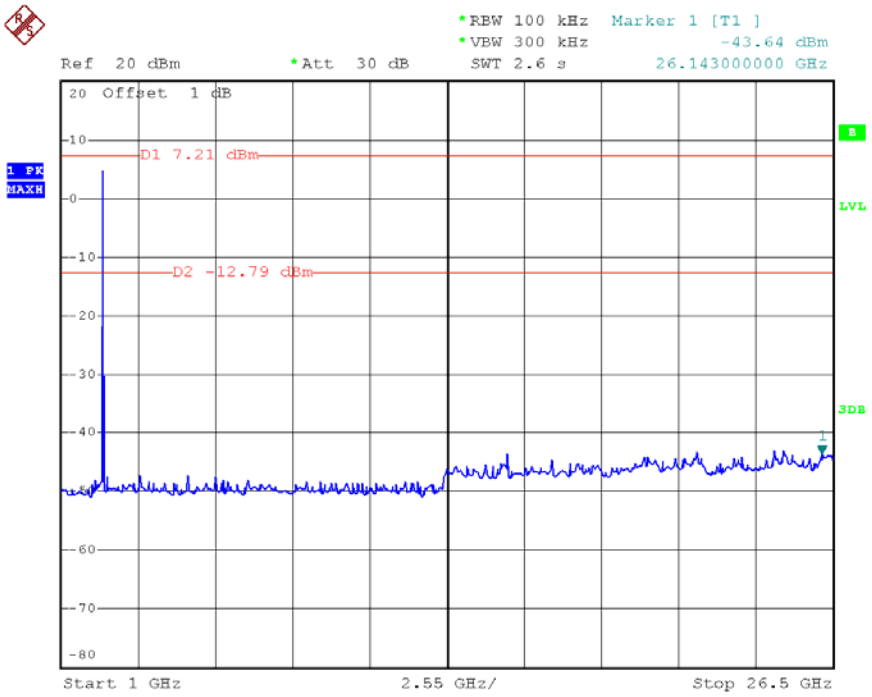
Date: 19.NOV.2013 02:37:08

TX G mode CH01 (30M~1000MHz)



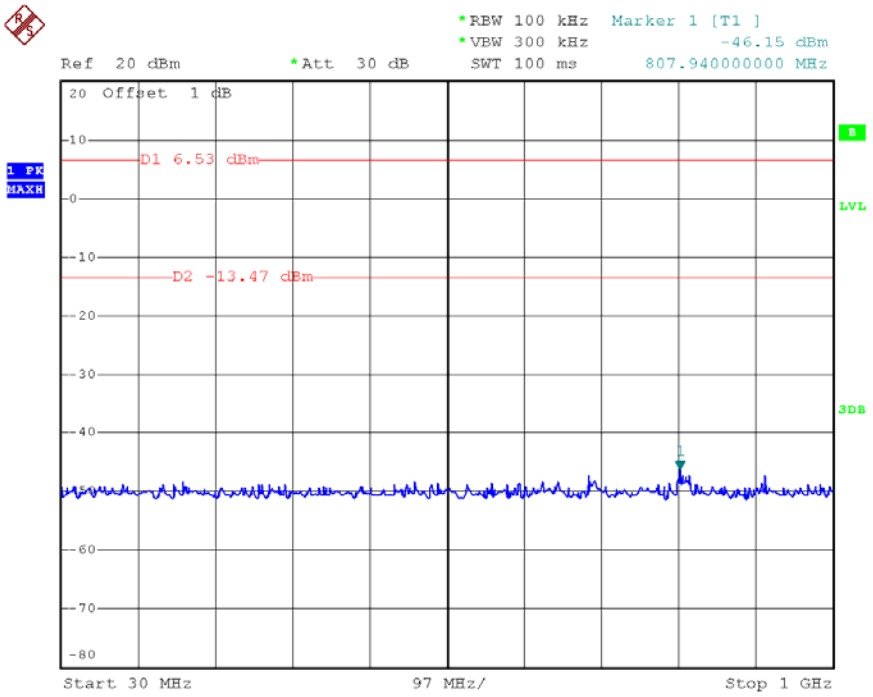
Date: 19.NOV.2013 03:02:11

TX G mode CH01 (1000MHz~10th Harmonic)



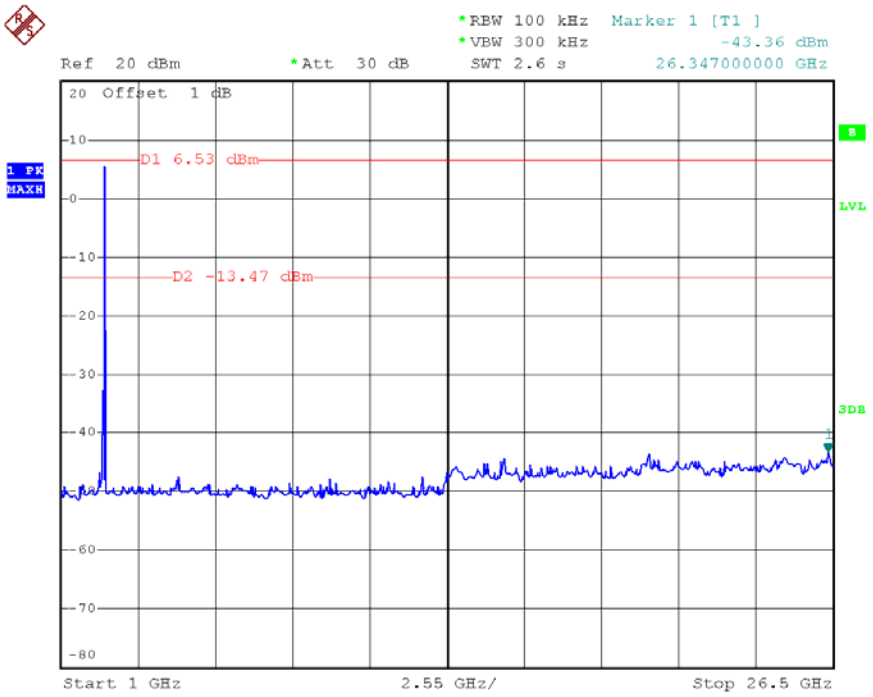
Date: 19.NOV.2013 03:01:53

TX G mode CH06 (30M~1000MHz)



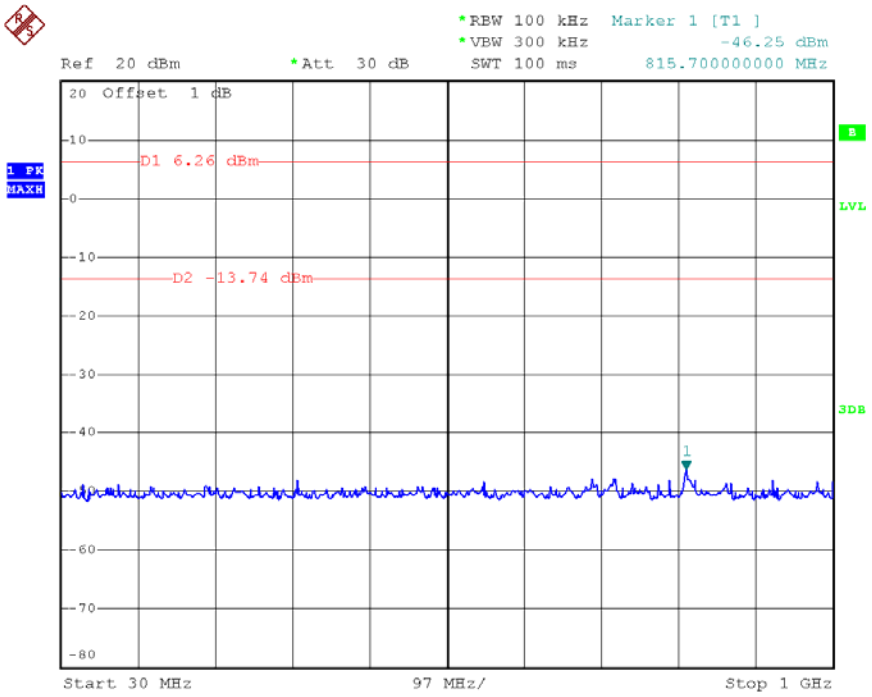
Date: 19.NOV.2013 02:49:45

TX G mode CH06 (1000MHz~10th Harmonic)



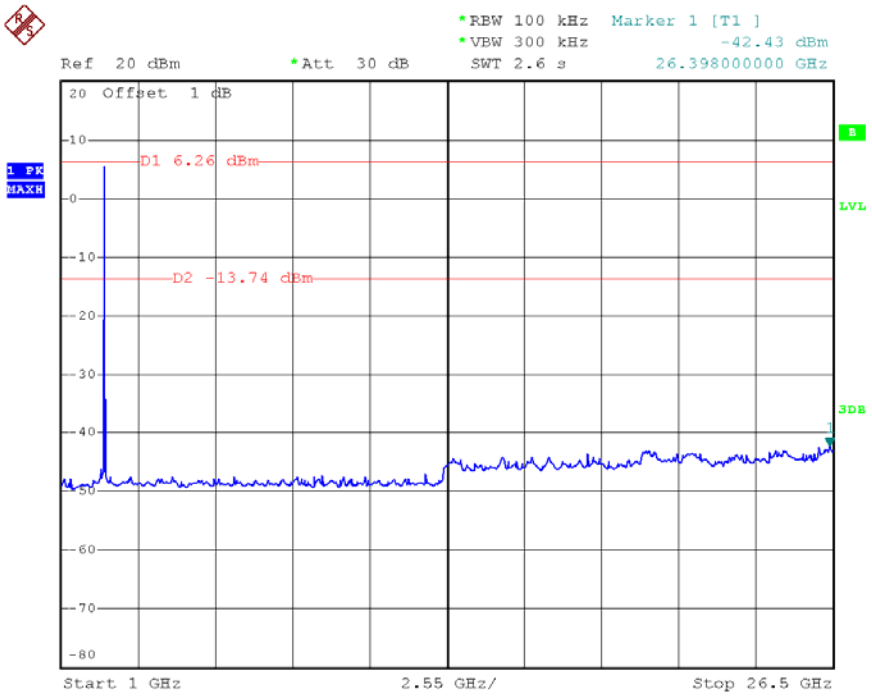
Date: 19.NOV.2013 02:47:59

TX G mode CH11 (30M~1000MHz)



Date: 19.NOV.2013 02:41:23

TX G mode CH11 (1000MHz~10th Harmonic)

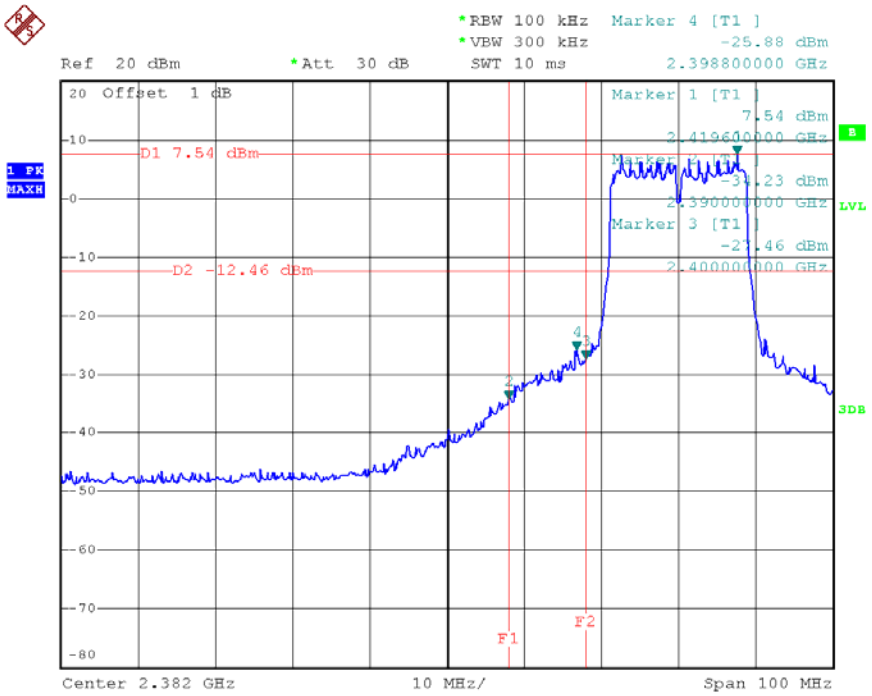


Date: 19.NOV.2013 02:41:01

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11-ANT 0		

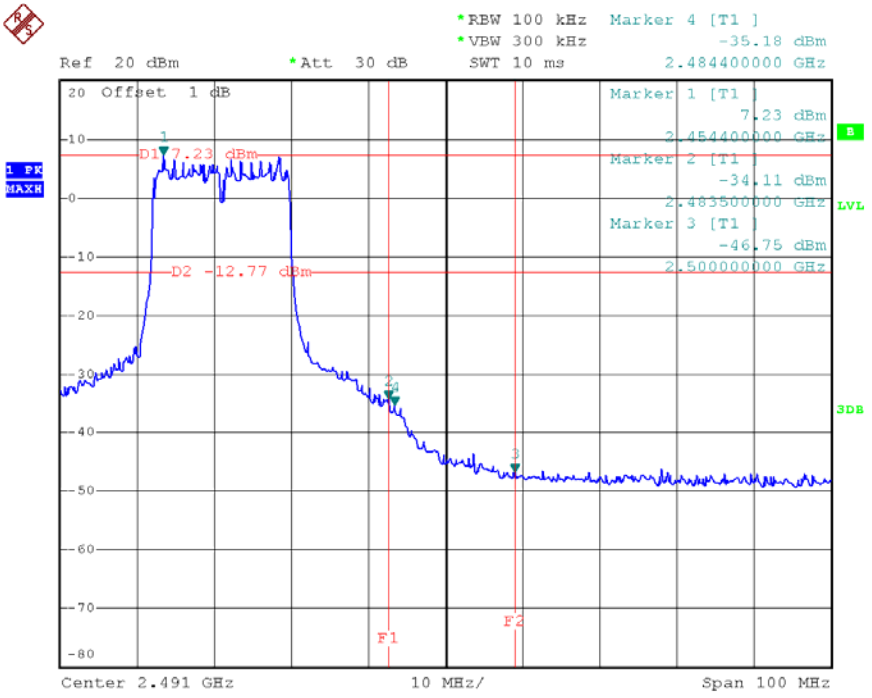
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.80	-25.88	2483.50	-34.11
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

TX HT20 mode CH01



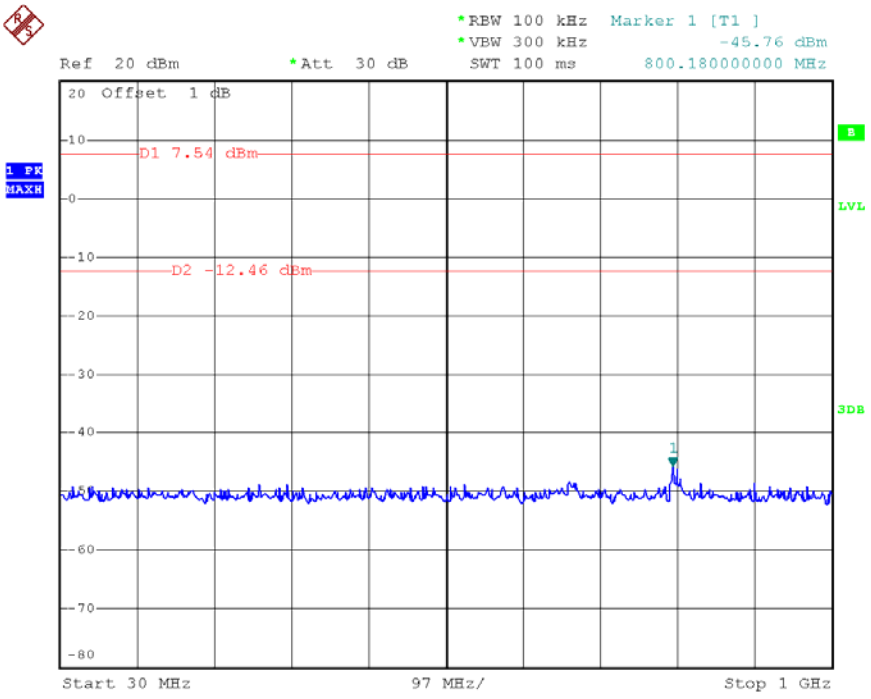
Date: 19.NOV.2013 04:42:06

TX HT20 mode CH11



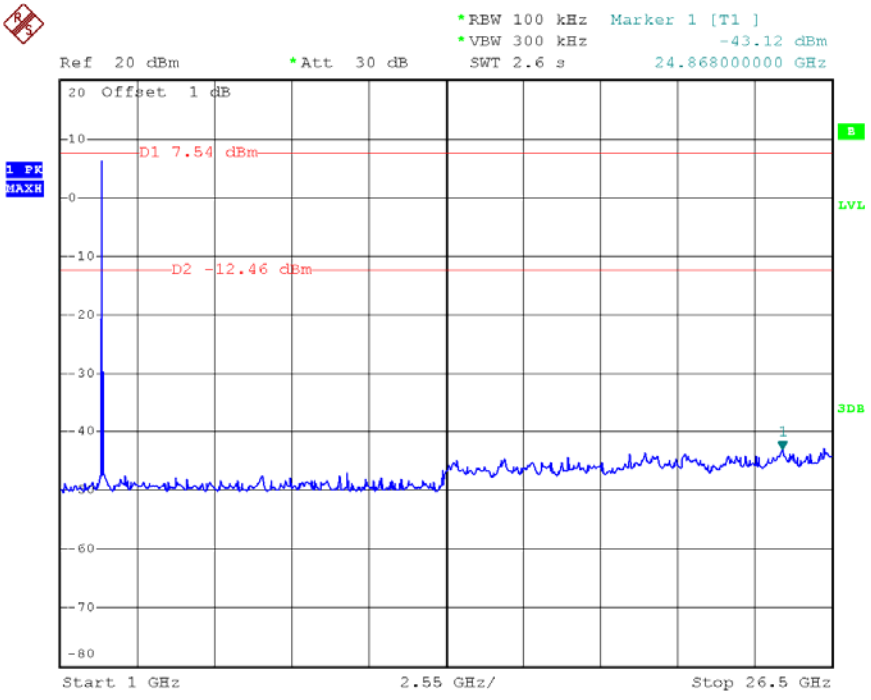
Date: 19.NOV.2013 05:06:33

TX HT20 mode CH01 (30M~1000MHz)



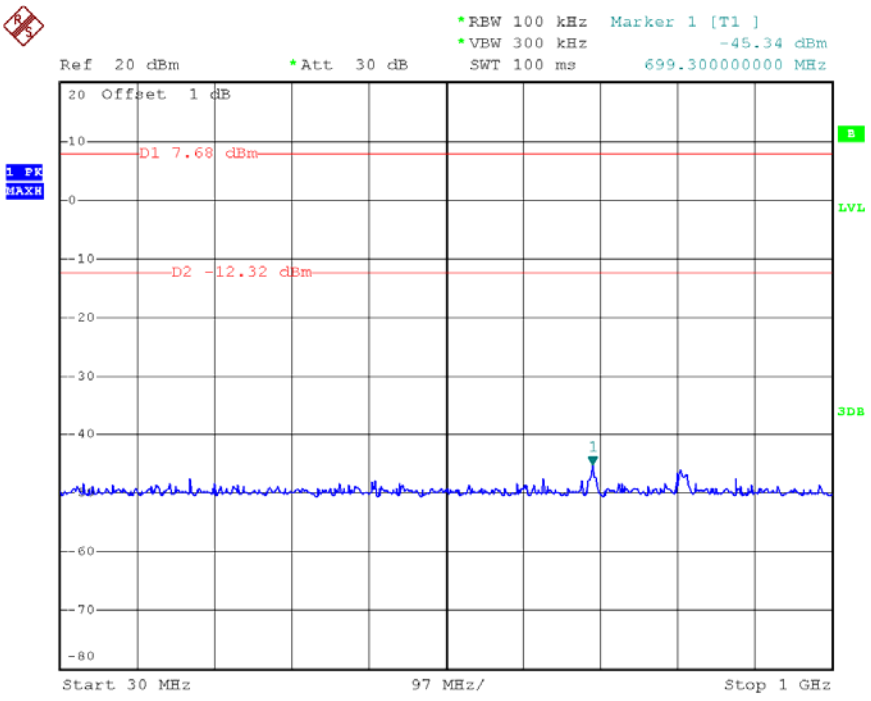
Date: 19.NOV.2013 04:43:41

TX HT20 mode CH01 (1000MHz~10th Harmonic)

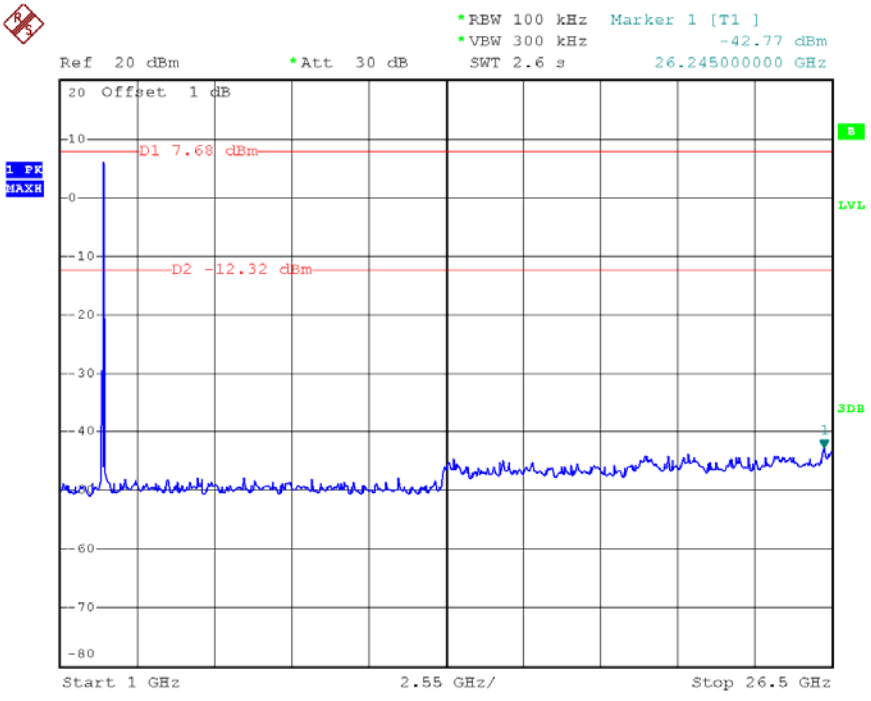


Date: 19.NOV.2013 04:43:20

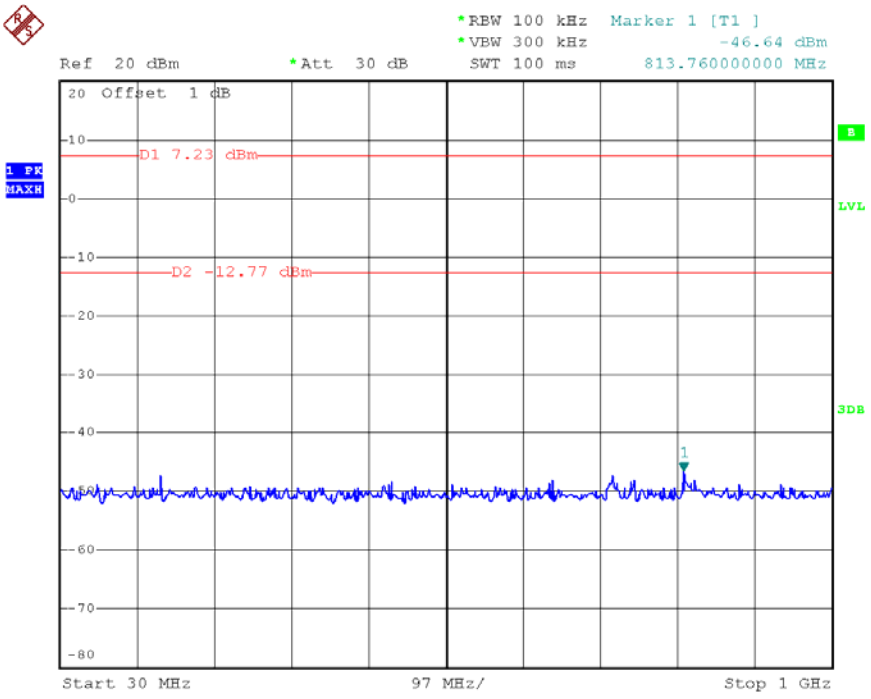
TX HT20 mode CH06 (30M~1000MHz)



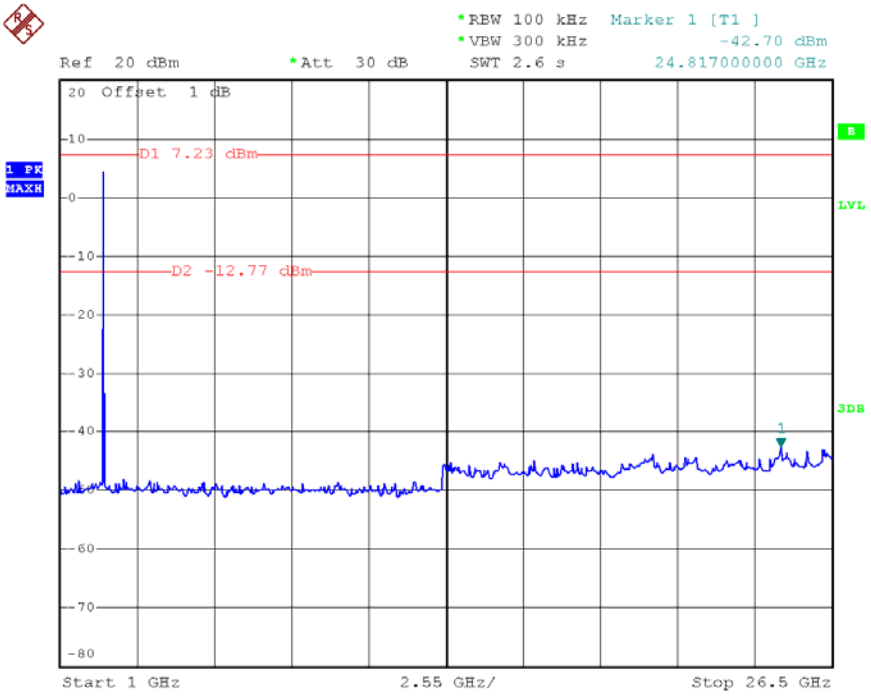
TX HT20 mode CH06 (1000MHz~10th Harmonic)



TX HT20 mode CH11 (30M~1000MHz)



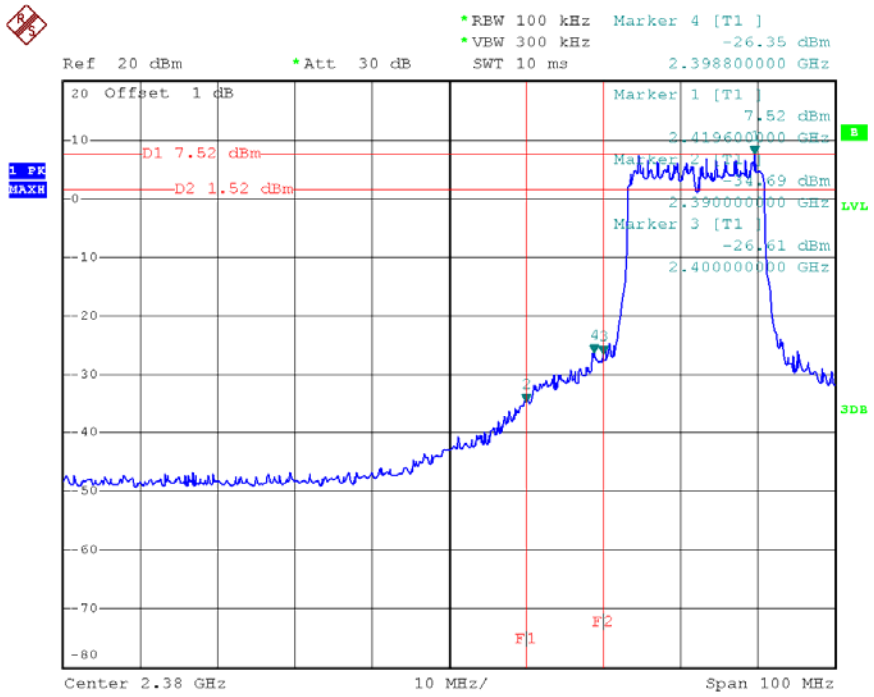
TX HT20 mode CH11 (1000MHz~10th Harmonic)



EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11-ANT 1		

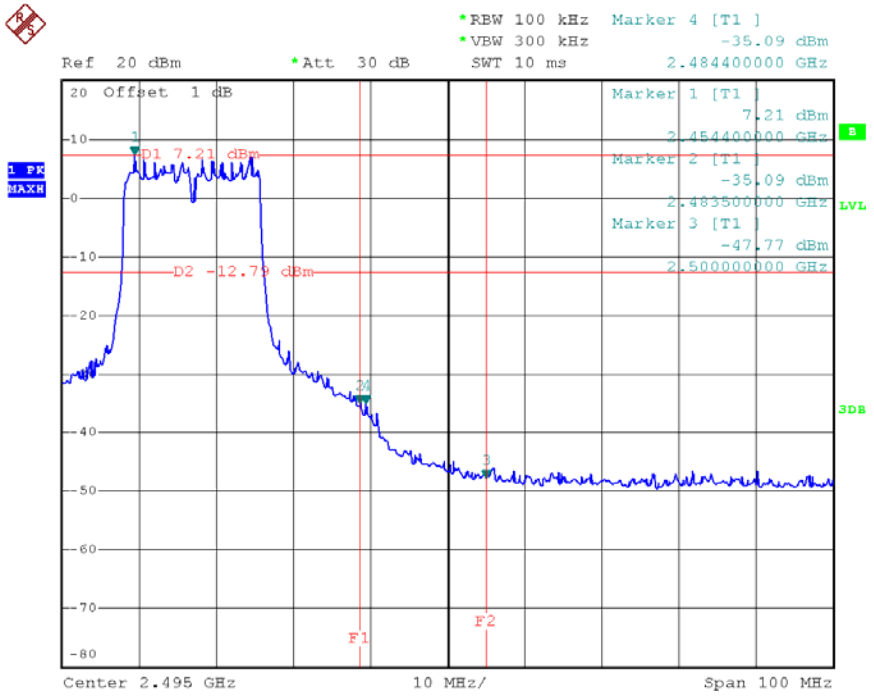
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.80	-26.35	2483.50	-35.09
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

TX HT20 mode CH01



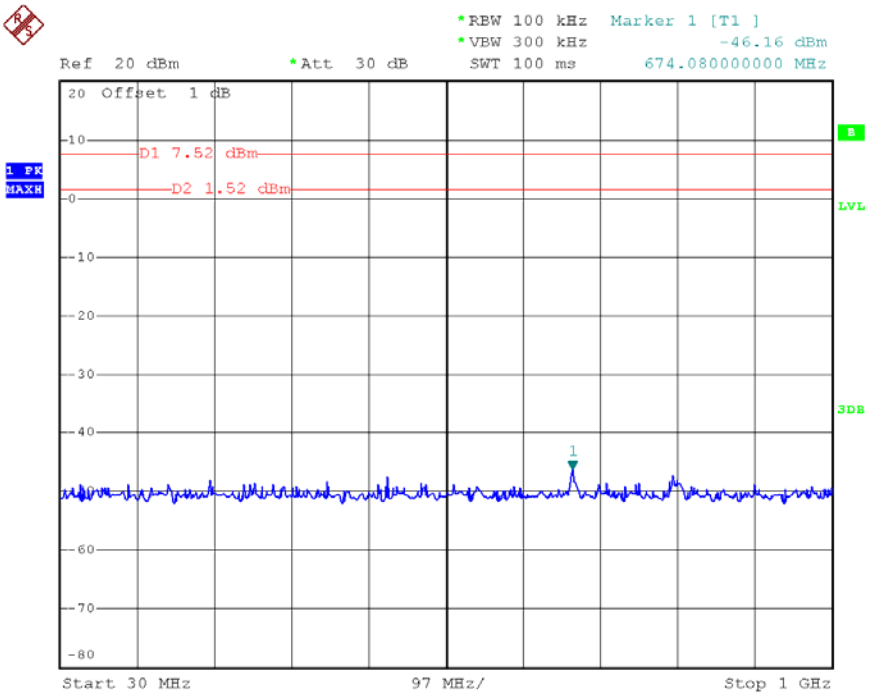
Date: 19.NOV.2013 04:46:34

TX HT20 mode CH11



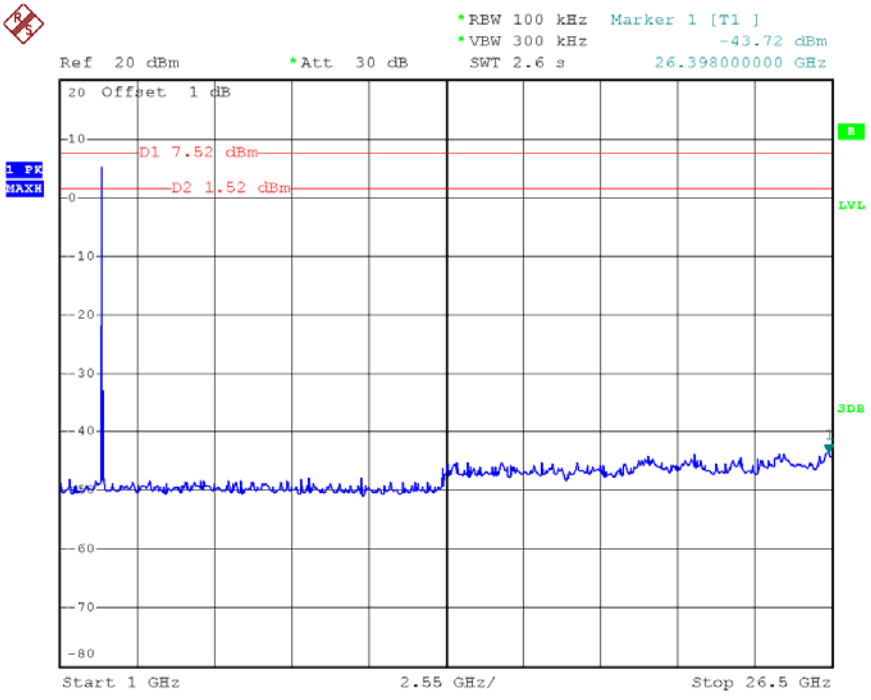
Date: 19.NOV.2013 05:09:53

TX HT20 mode CH01 (30M~1000MHz)



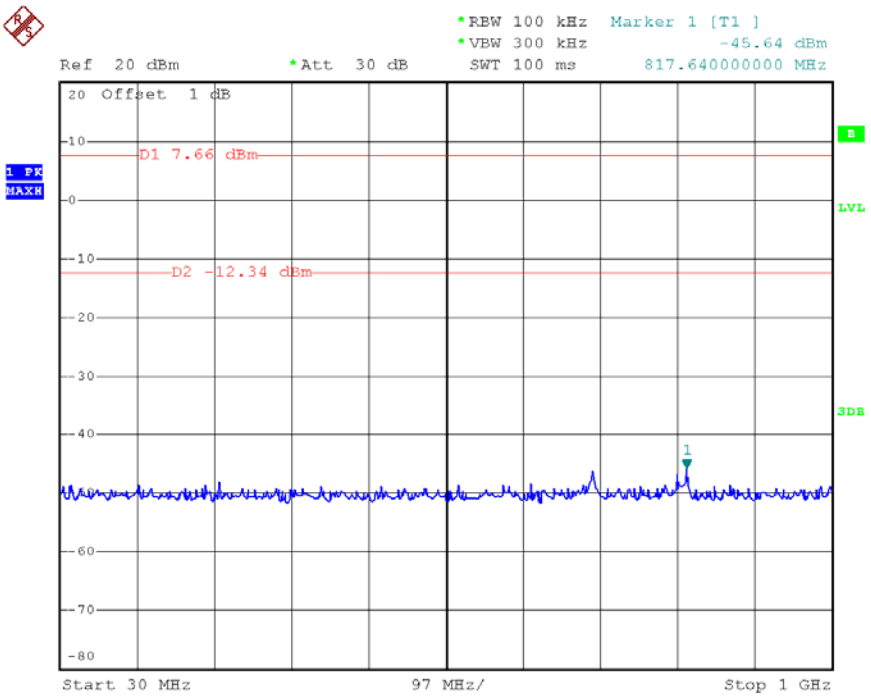
Date: 19.NOV.2013 04:47:49

TX HT20 mode CH01 (1000MHz~10th Harmonic)



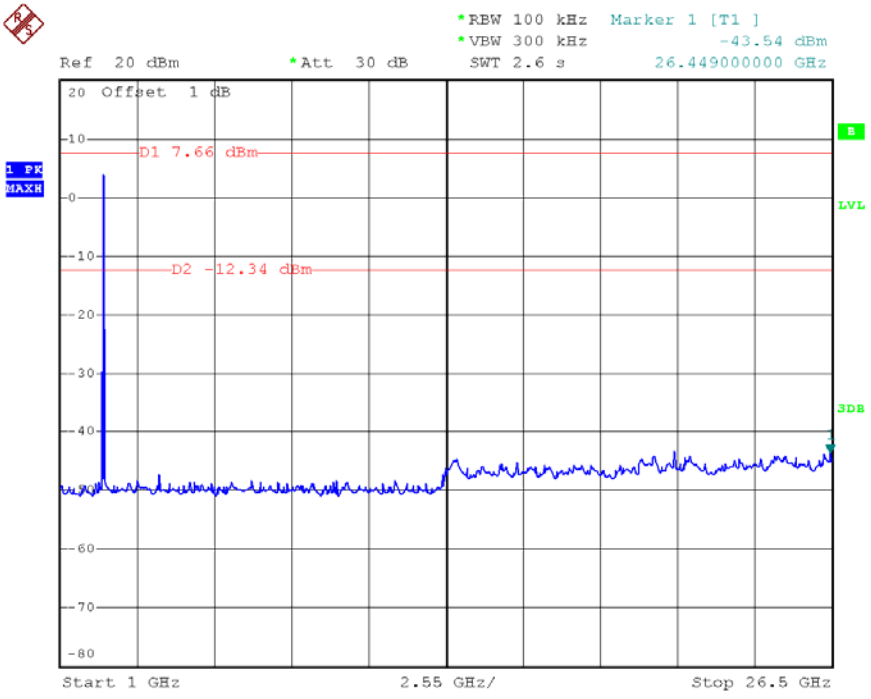
Date: 19.NOV.2013 04:47:09

TX HT20 mode CH06 (30M~1000MHz)



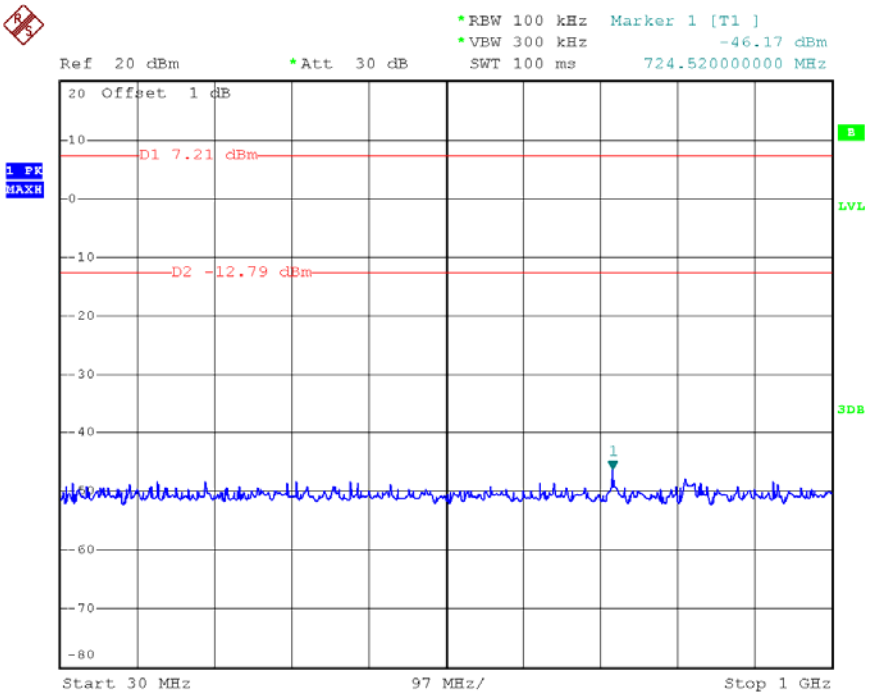
Date: 19.NOV.2013 04:57:36

TX HT20 mode CH06 (1000MHz~10th Harmonic)



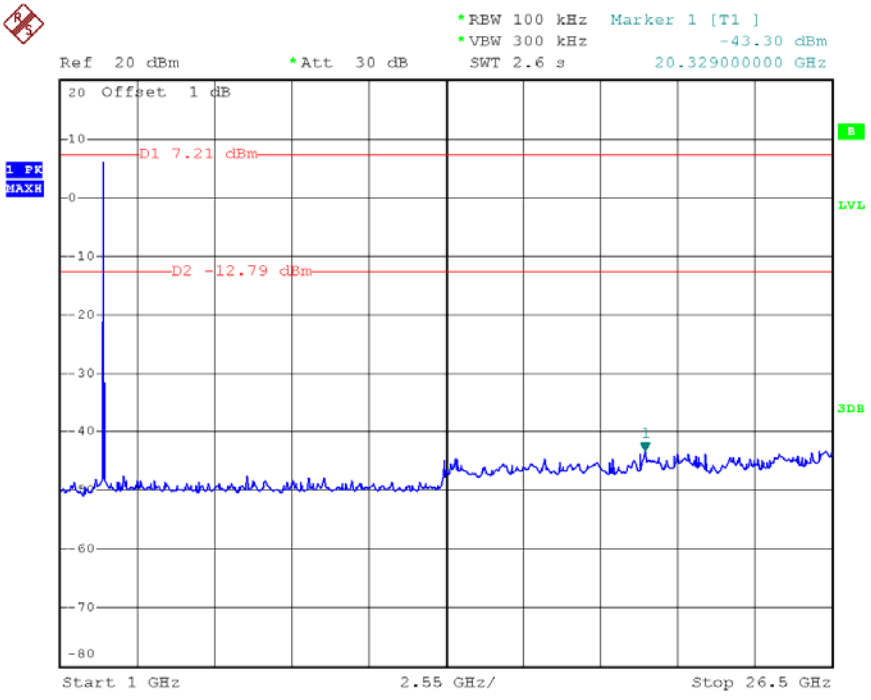
Date: 19.NOV.2013 04:57:00

TX HT20 mode CH11 (30M~1000MHz)



Date: 19.NOV.2013 05:10:56

TX HT20 mode CH11 (1000MHz~10th Harmonic)

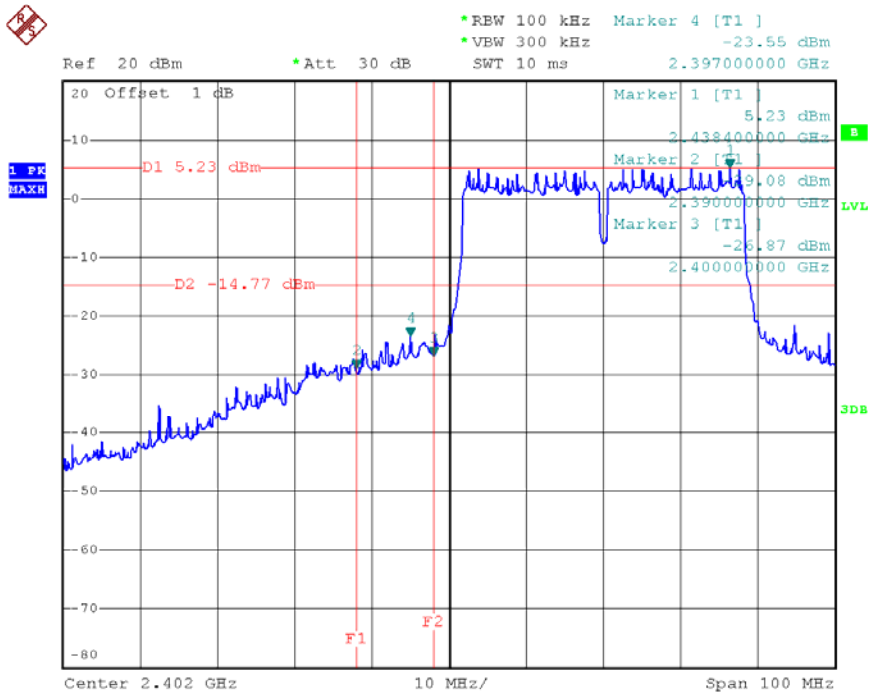


Date: 19.NOV.2013 05:10:32

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09-ANT 0		

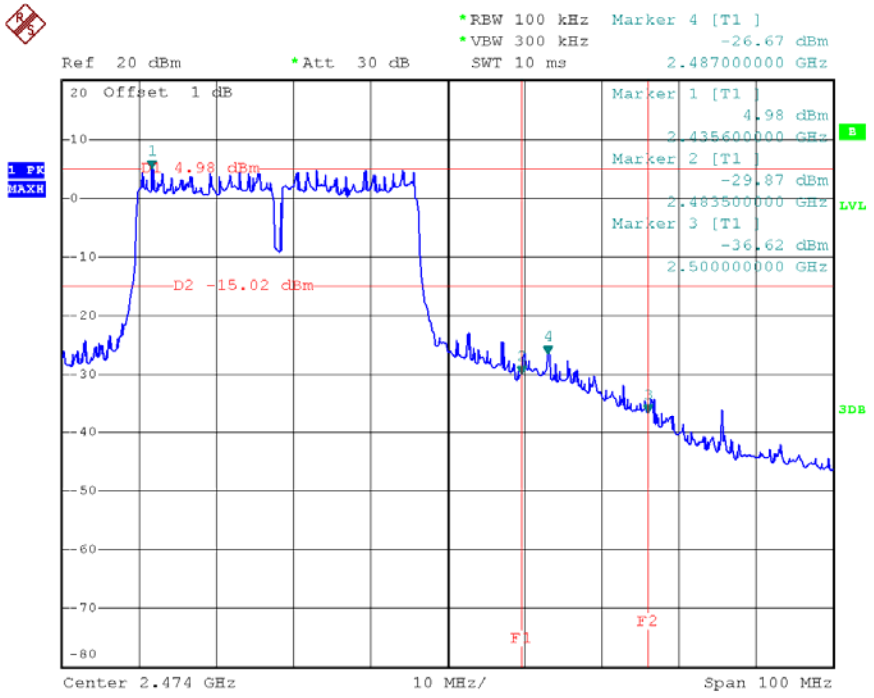
Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2397.00	-23.55	2487.00	-26.67
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

TX HT40 mode CH03



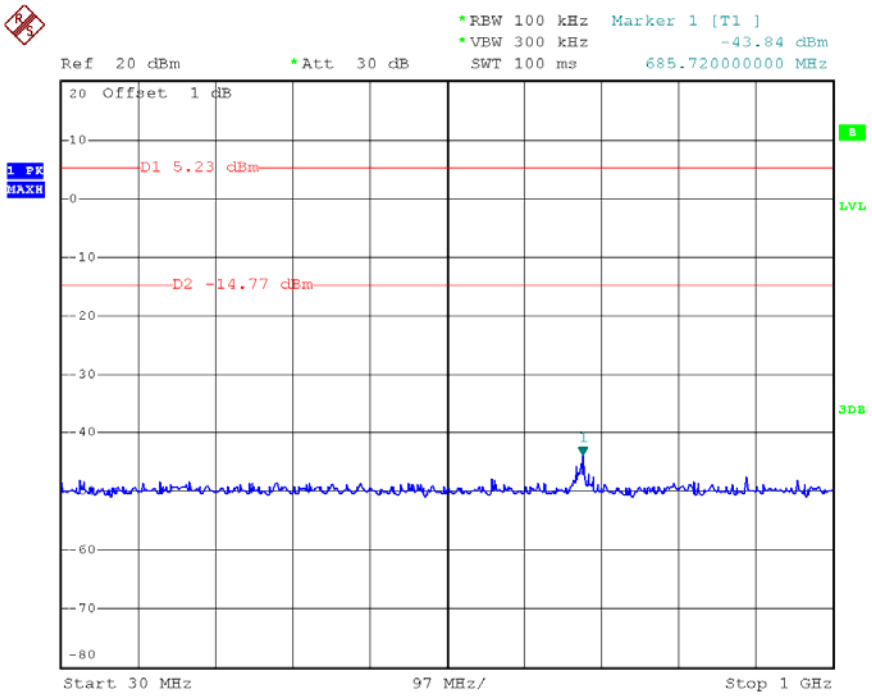
Date: 19.NOV.2013 05:27:28

TX HT40 mode CH09



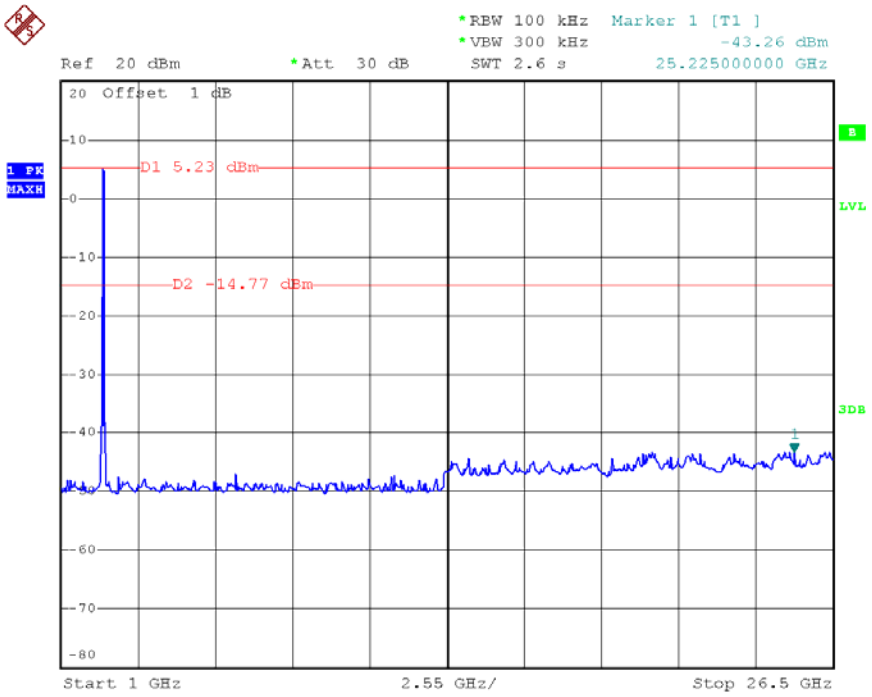
Date: 19.NOV.2013 05:48:23

TX HT40 mode CH03 (30M~1000MHz)



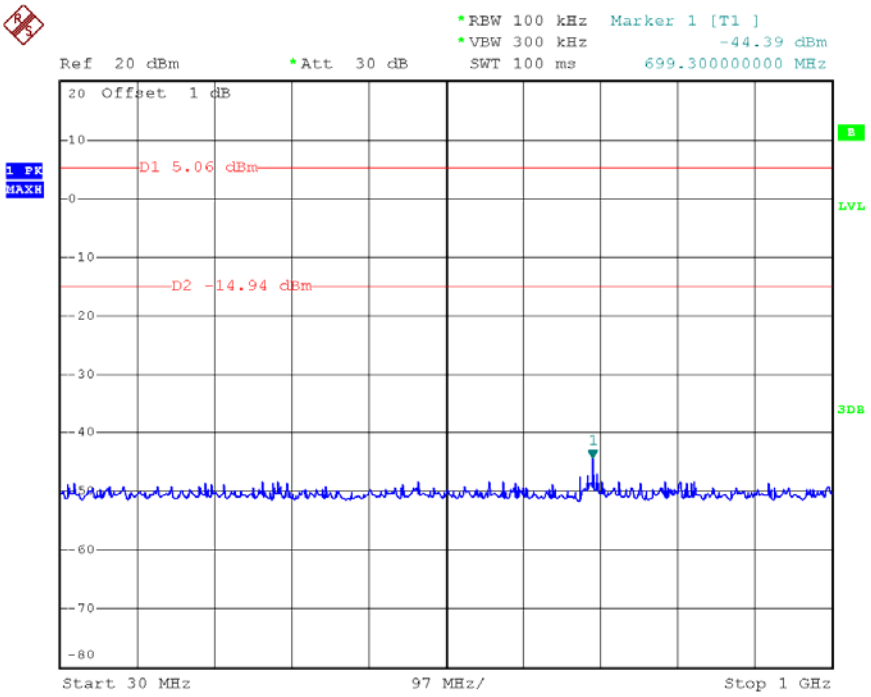
Date: 19.NOV.2013 05:29:19

TX HT40 mode CH03 (1000MHz~10th Harmonic)



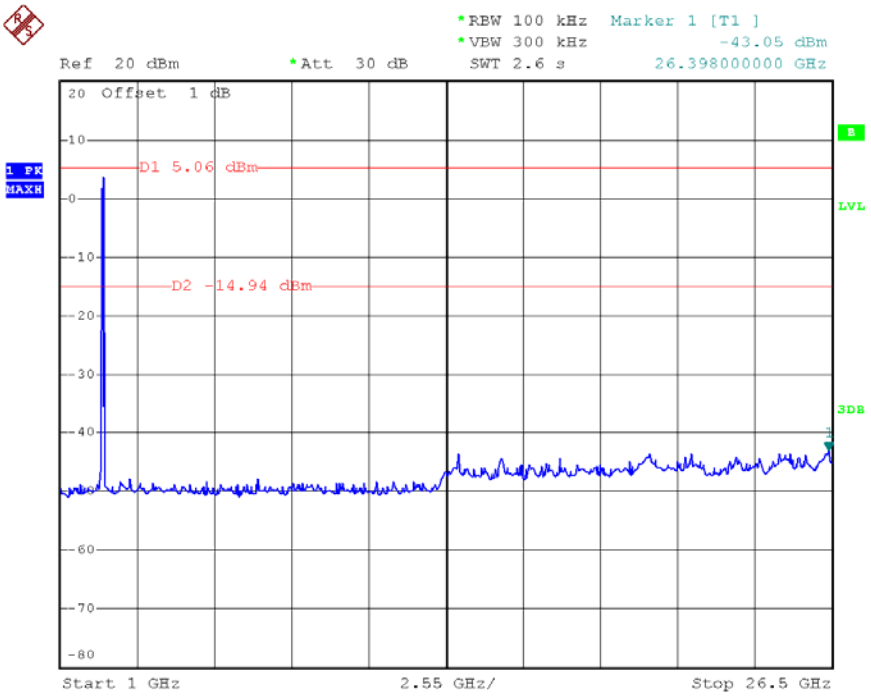
Date: 19.NOV.2013 05:28:27

TX HT40 mode CH06 (30M~1000MHz)



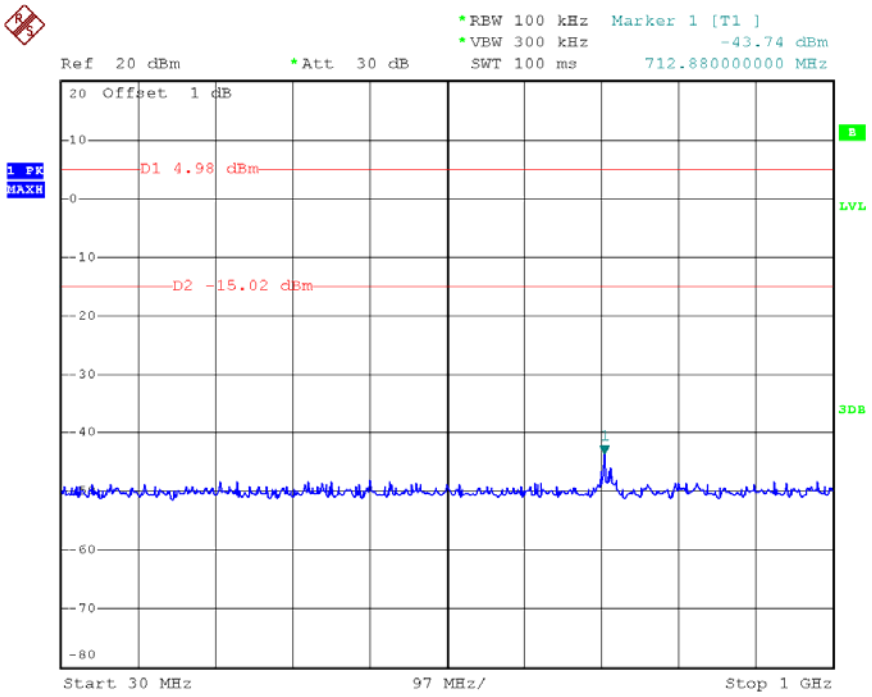
Date: 19.NOV.2013 05:38:47

TX HT40 mode CH06 (1000MHz~10th Harmonic)



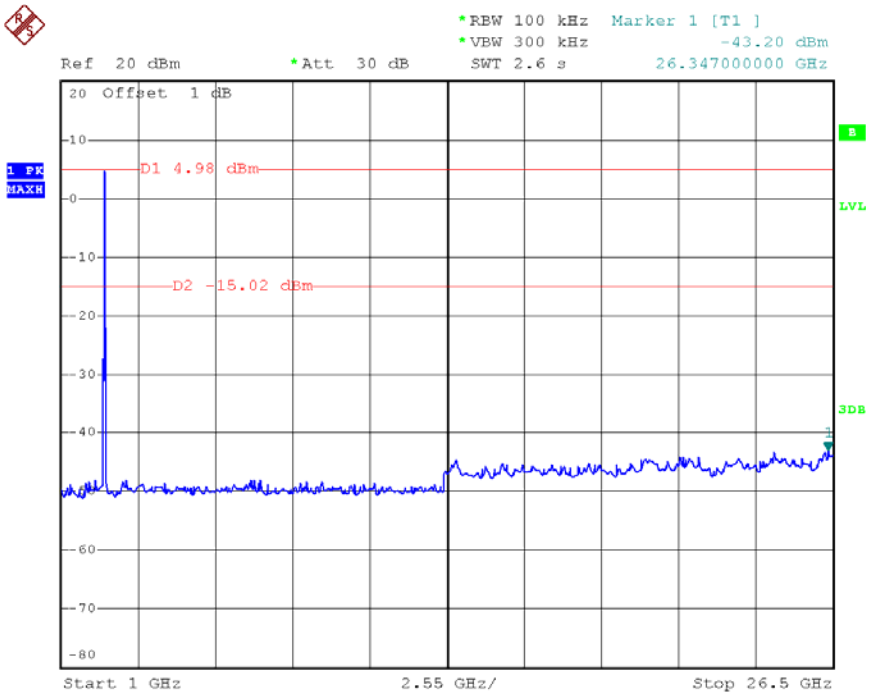
Date: 19.NOV.2013 05:38:30

TX HT40 mode CH09 (30M~1000MHz)



Date: 19.NOV.2013 05:49:30

TX HT40 mode CH09 (1000MHz~10th Harmonic)

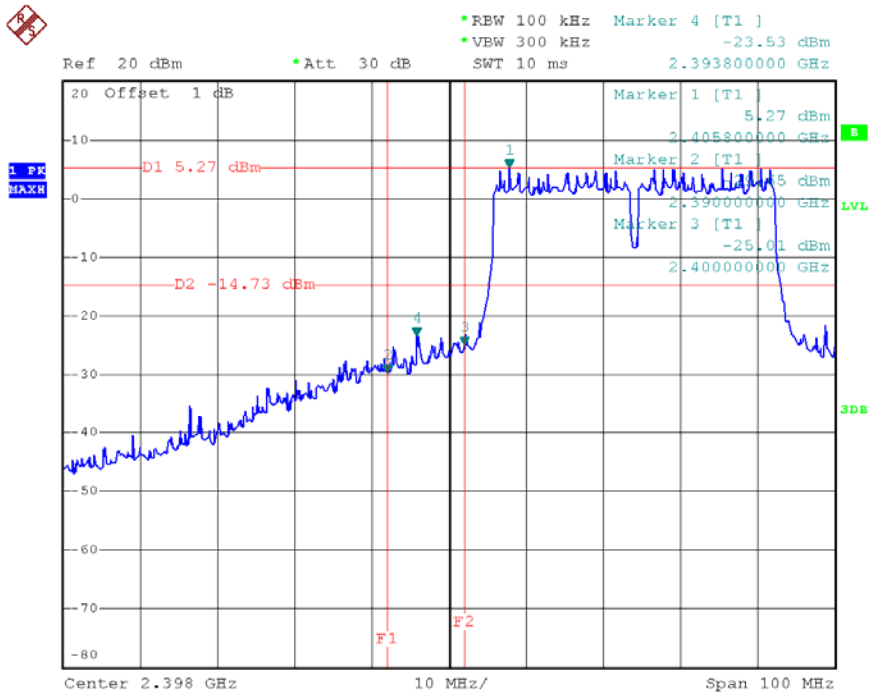


Date: 19.NOV.2013 05:48:51

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09-ANT 1		

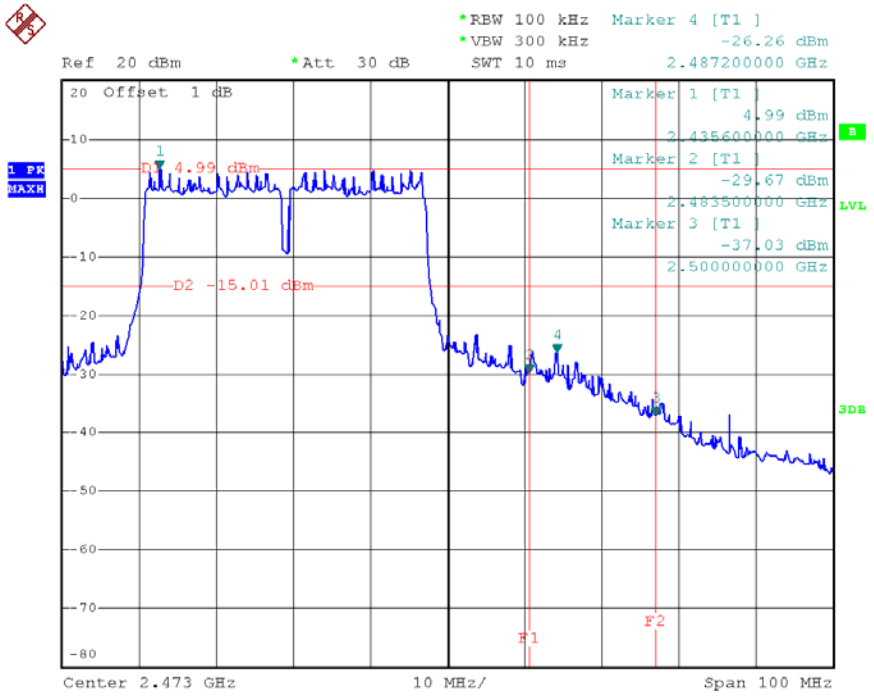
Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2393.80	-23.53	2487.20	-26.26
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

TX HT40 mode CH03



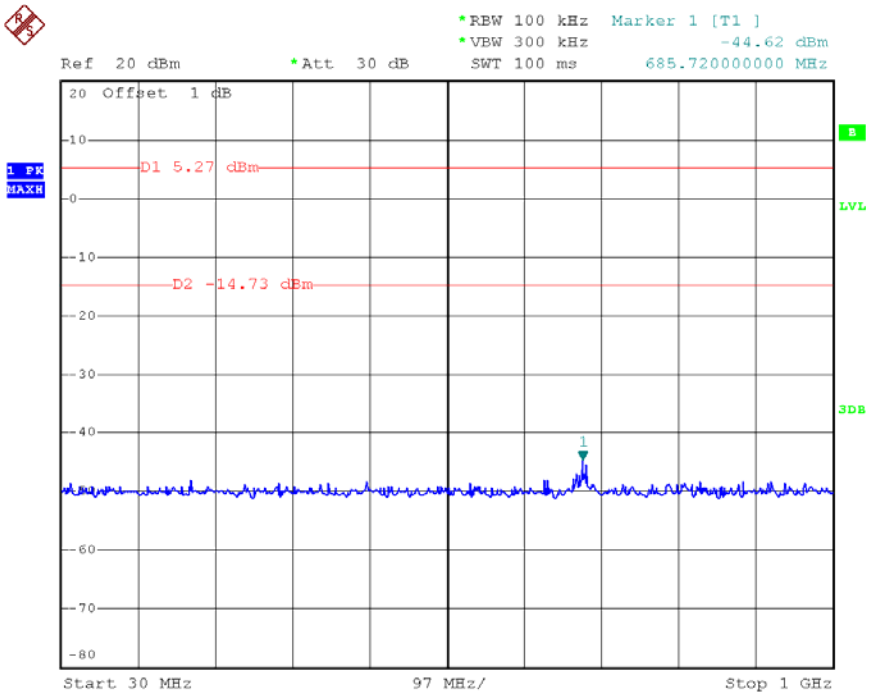
Date: 19.NOV.2013 05:31:26

TX HT40 mode CH09



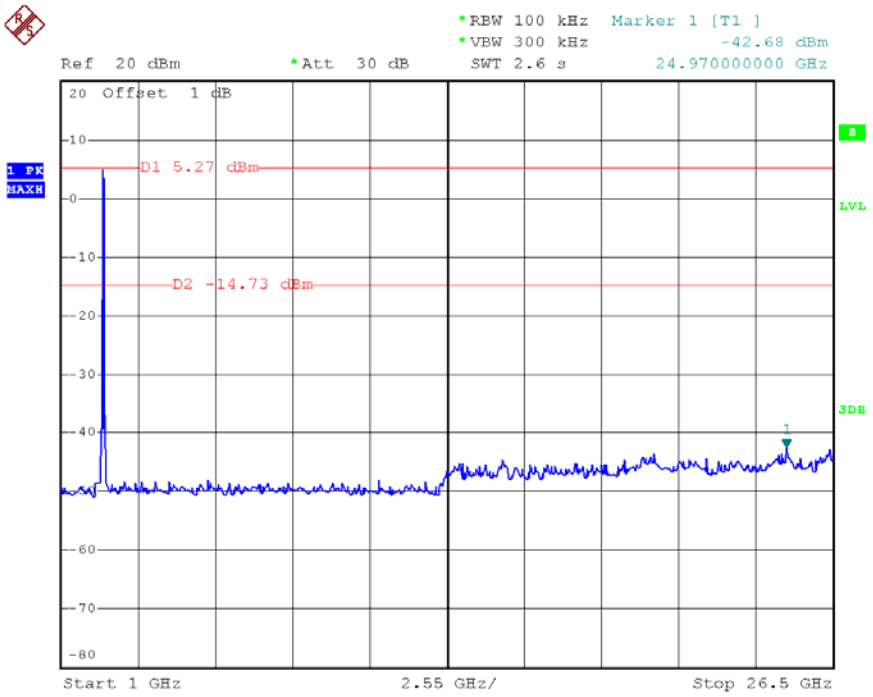
Date: 19.NOV.2013 05:51:42

TX HT40 mode CH03 (30M~1000MHz)



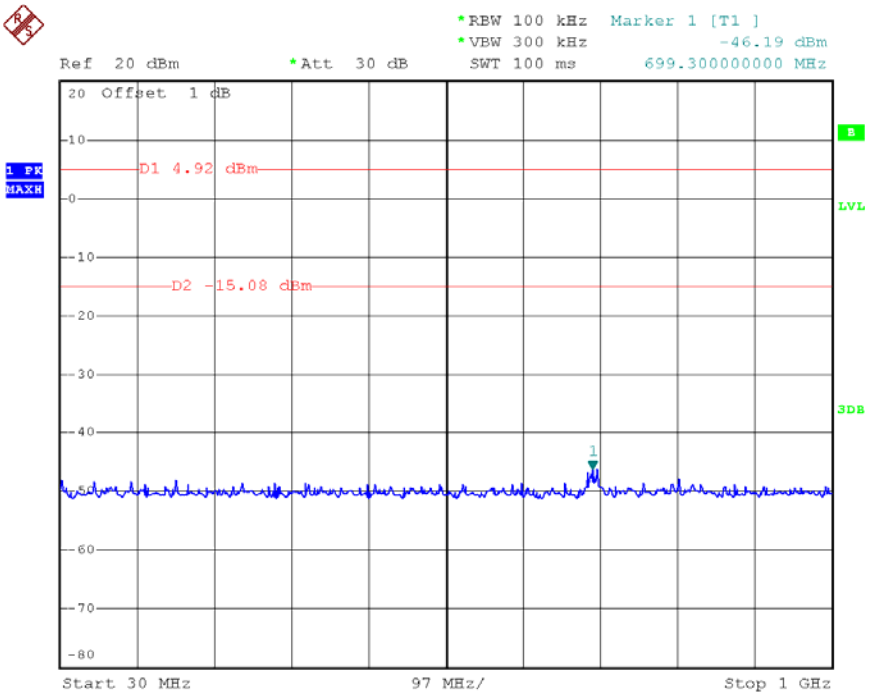
Date: 19.NOV.2013 05:32:27

TX HT40 mode CH03 (1000MHz~10th Harmonic)



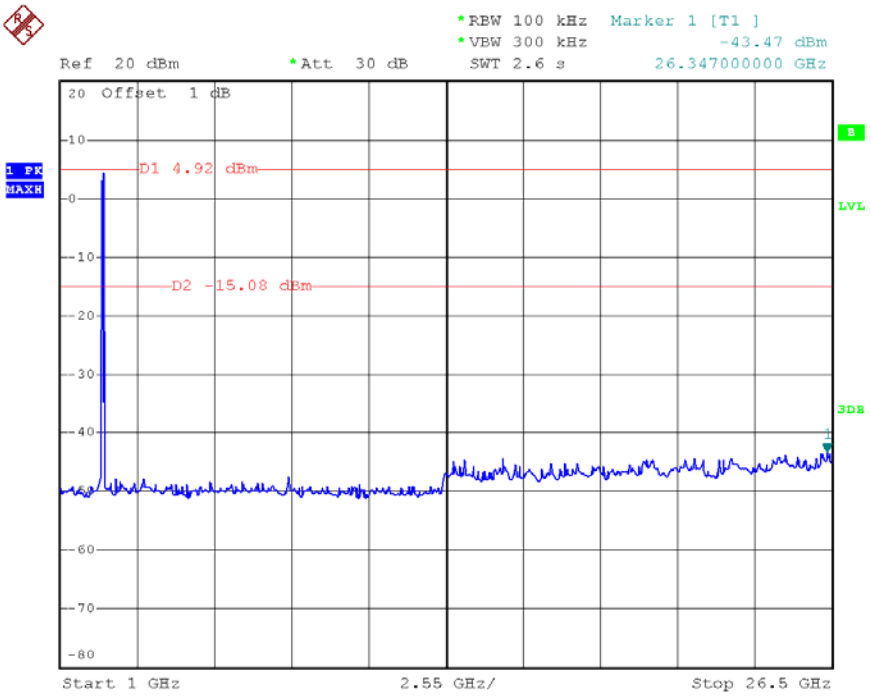
Date: 19.NOV.2013 05:31:53

TX HT40 mode CH06 (30M~1000MHz)



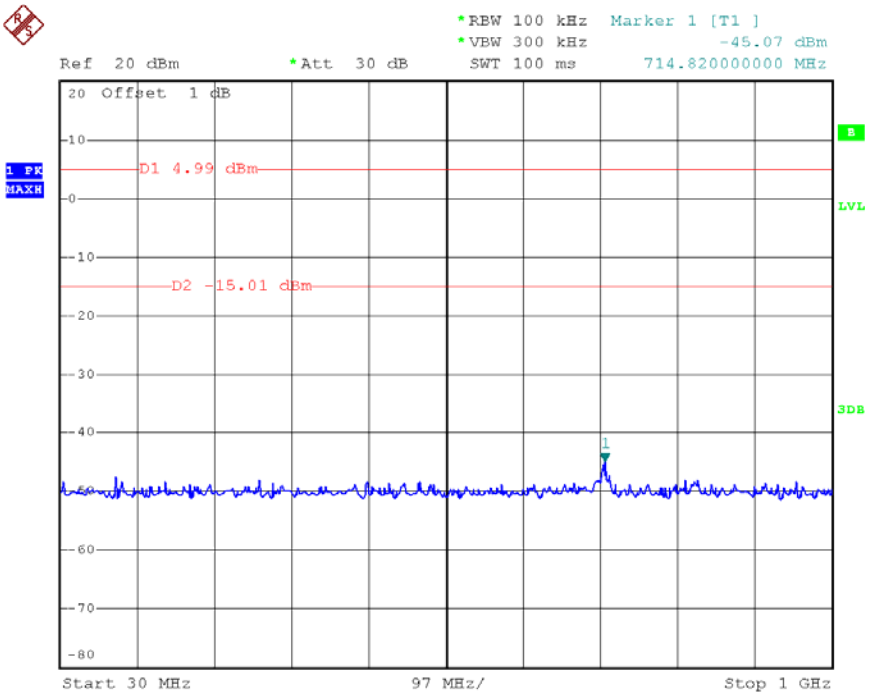
Date: 19.NOV.2013 05:41:15

TX HT40 mode CH06 (1000MHz~10th Harmonic)



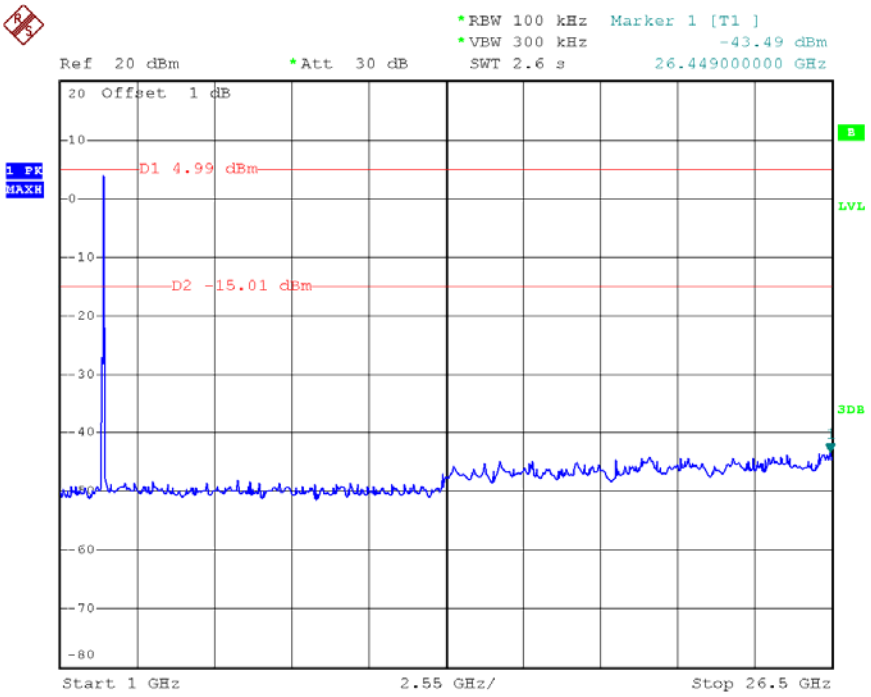
Date: 19.NOV.2013 05:40:41

TX HT40 mode CH09 (30M~1000MHz)



Date: 19.NOV.2013 05:52:44

TX HT40 mode CH09 (1000MHz~10th Harmonic)



Date: 19.NOV.2013 05:52:11

8. POWER SPECTRAL DENSITY TEST

8.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C / RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e) RSS-210 Annex 8(A8.2(b))	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

8.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov. 09, 2014

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

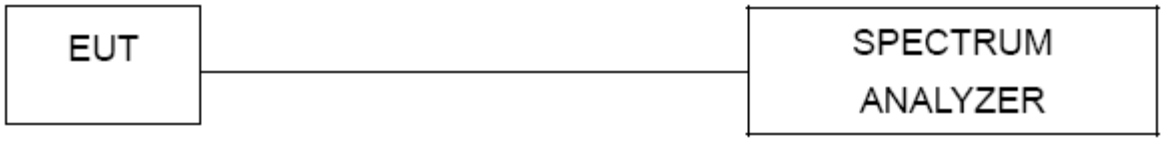
8.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW=3KHz, VBW=10KHz, Sweep time = Auto.

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP



8.1.5 EUT OPERATION CONDITIONS

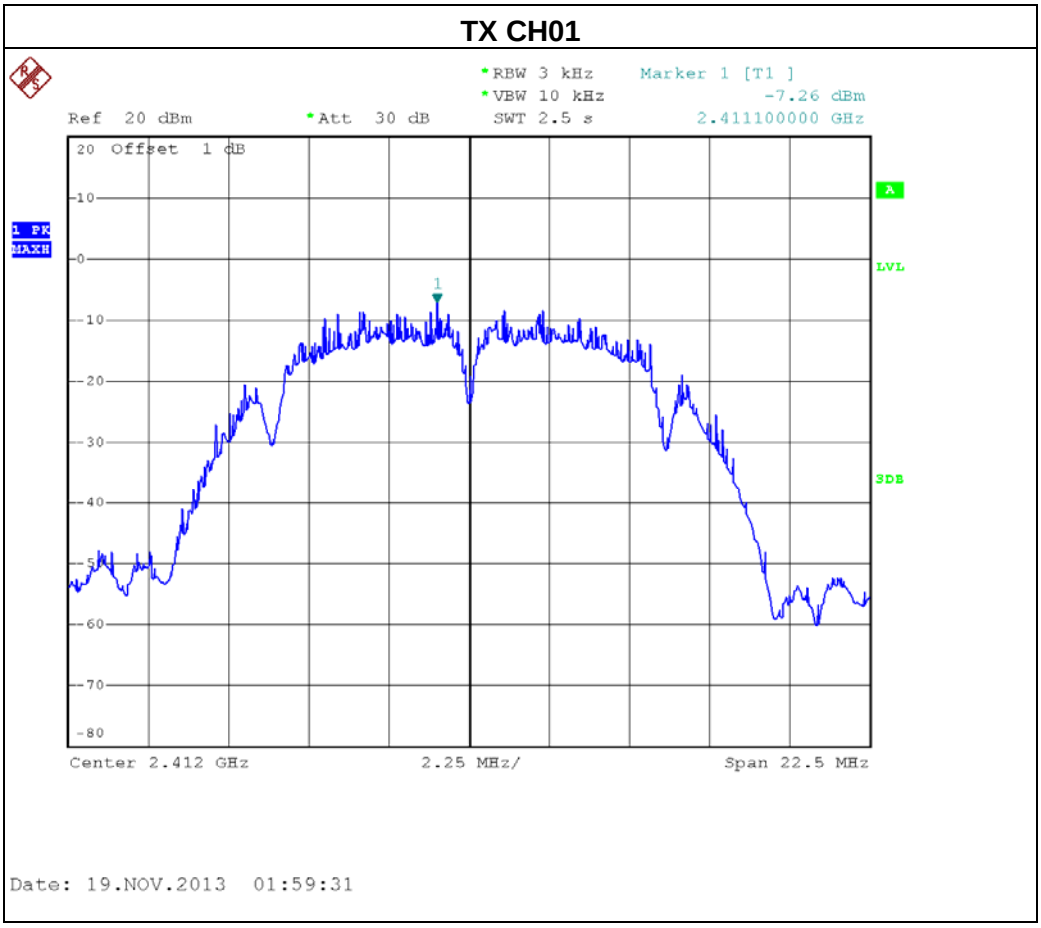
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.6 TEST RESULTS

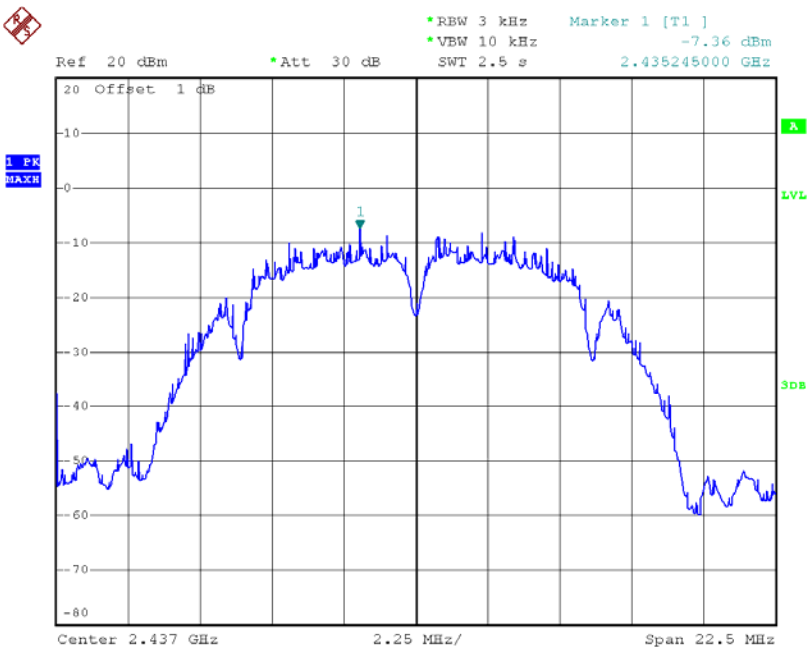
EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-7.26	8
CH06	2437	-7.36	8
CH11	2462	-9.26	8

TX CH01

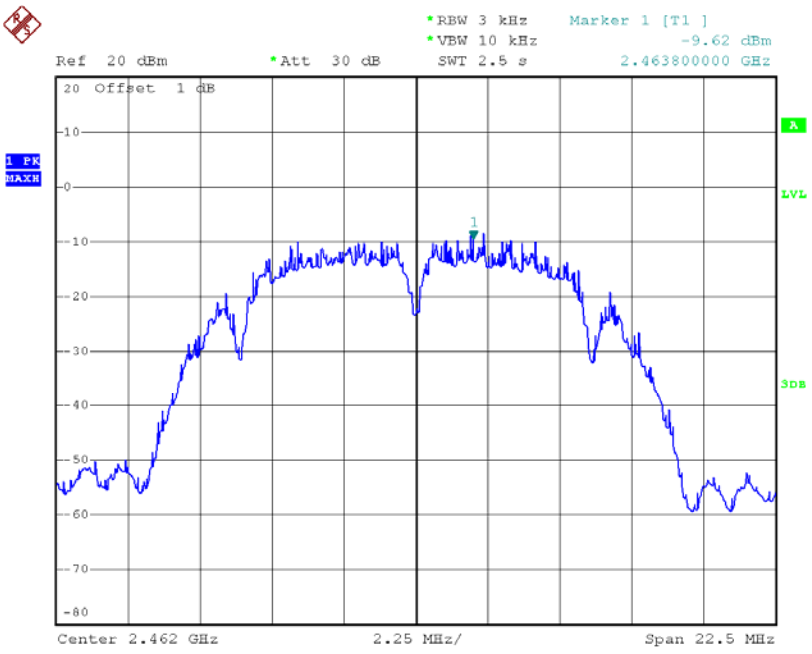


TX CH06



Date: 19.NOV.2013 02:10:37

TX CH11

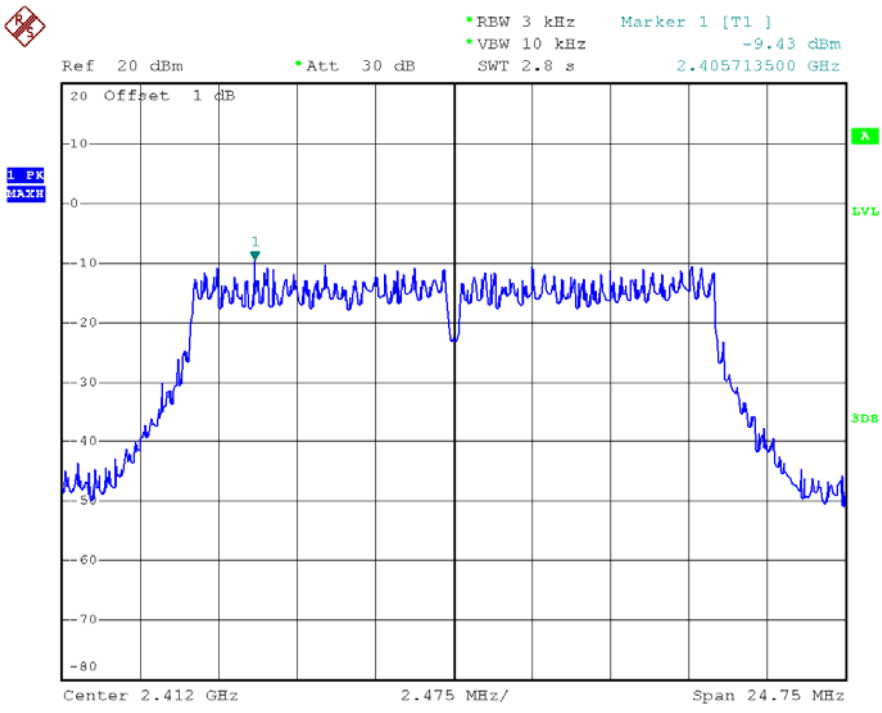


Date: 19.NOV.2013 02:12:13

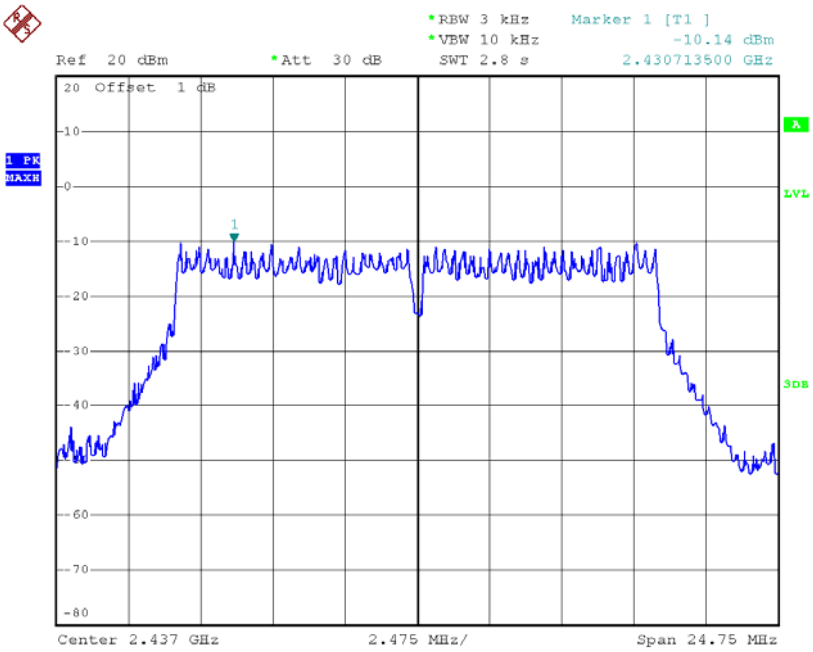
EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-9.43	8
CH06	2437	-10.14	8
CH11	2462	-10.54	8

TX CH01

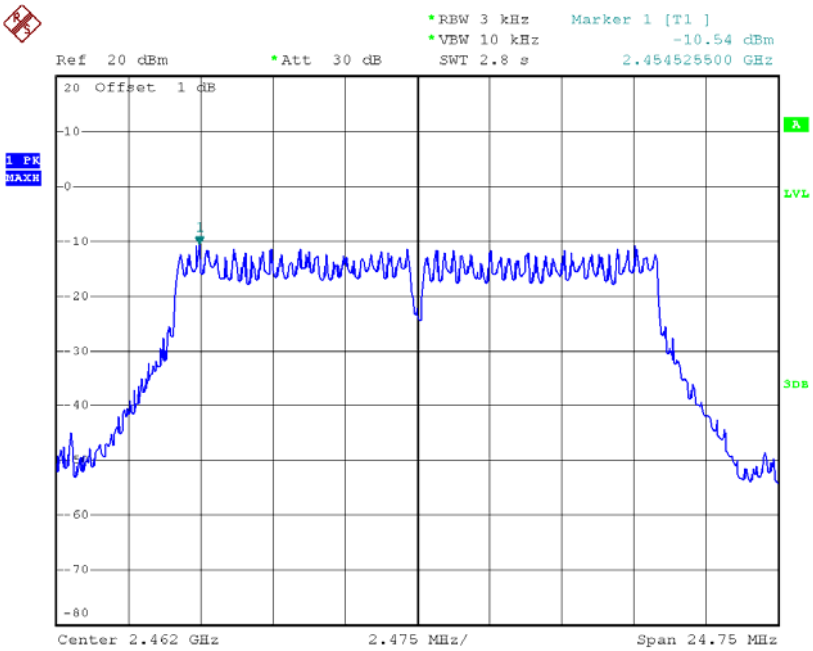


TX CH06



Date: 19.NOV.2013 02:43:35

TX CH11

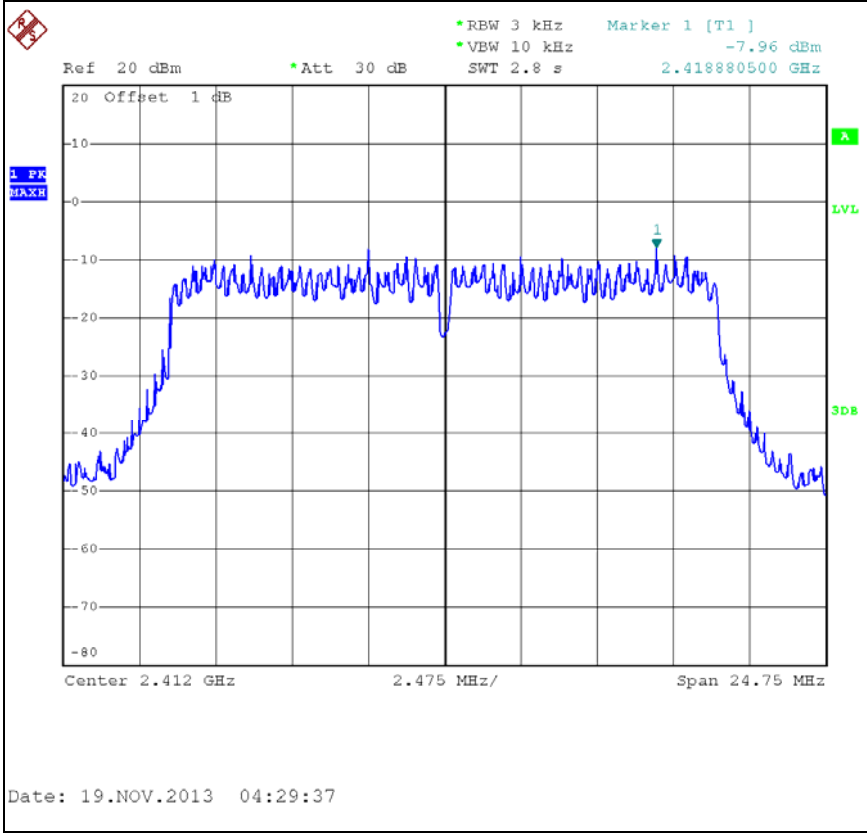


Date: 19.NOV.2013 02:27:38

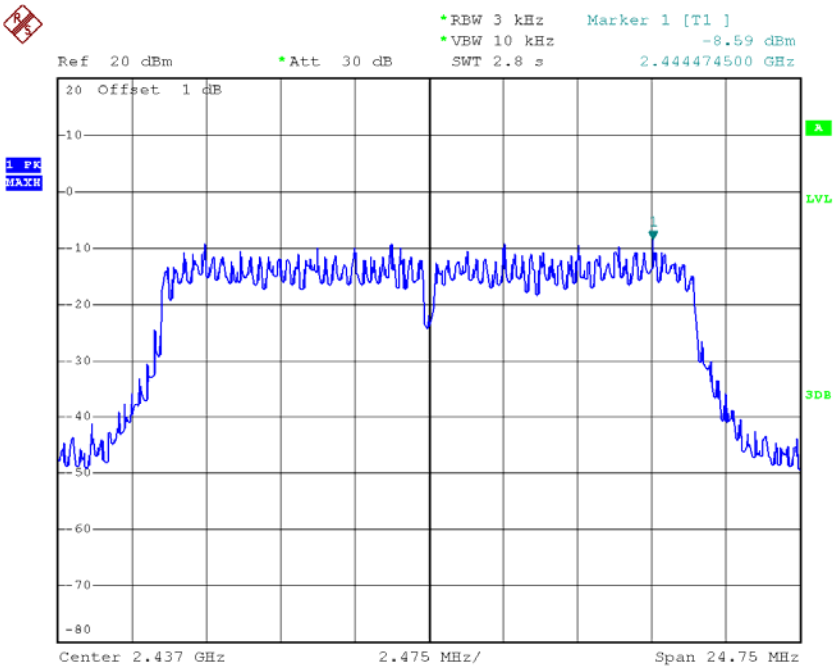
EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 0		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-7.96	8
CH06	2437	-8.59	8
CH11	2462	-9.50	8

TX CH01

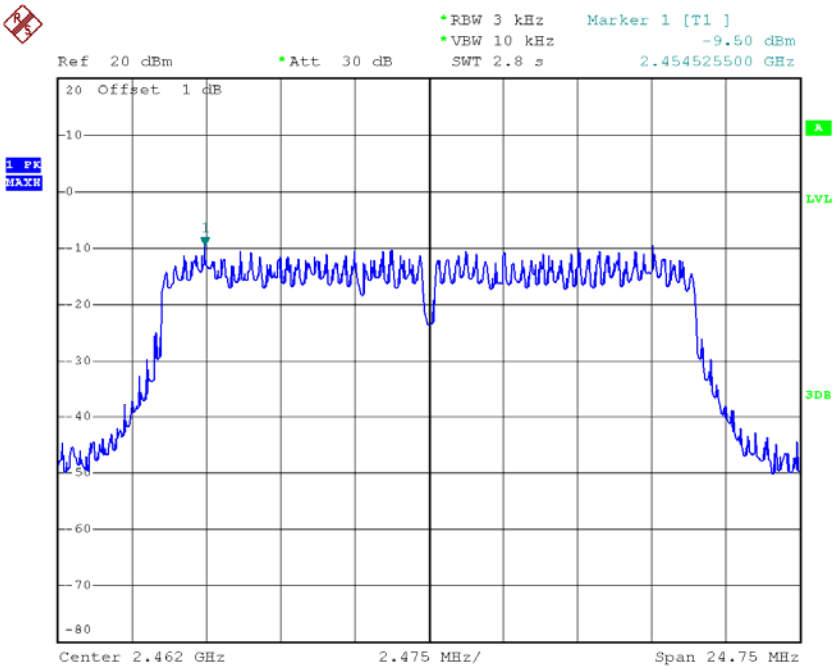


TX CH06



Date: 19.NOV.2013 04:48:41

TX CH11

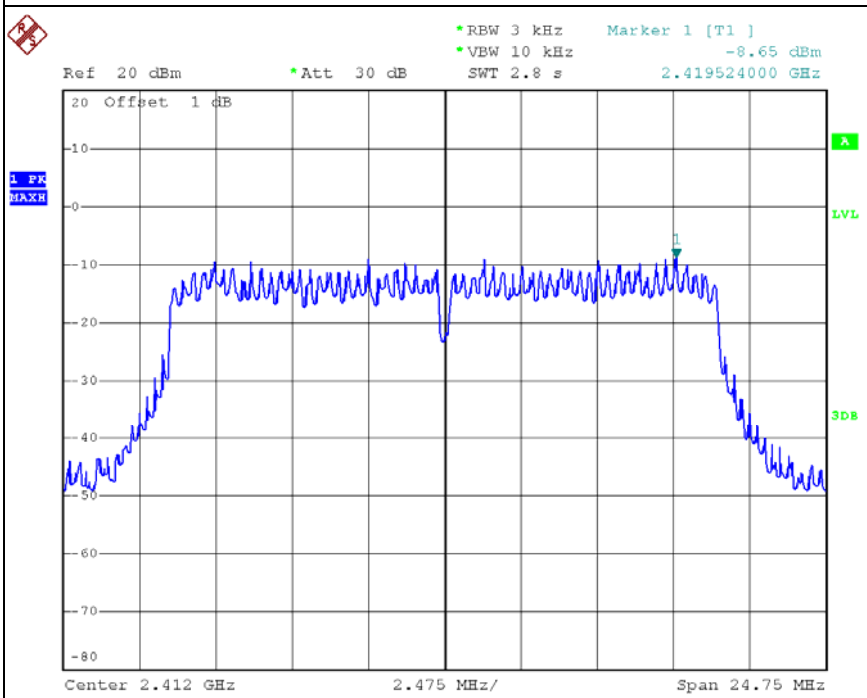


Date: 19.NOV.2013 04:59:23

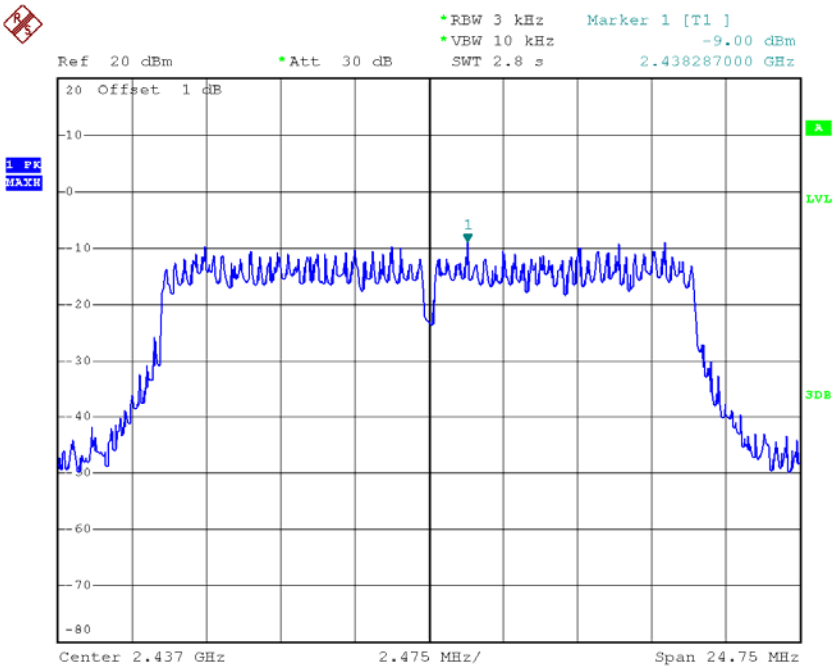
EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-8.65	8
CH06	2437	-9.00	8
CH11	2462	-9.16	8

TX CH01

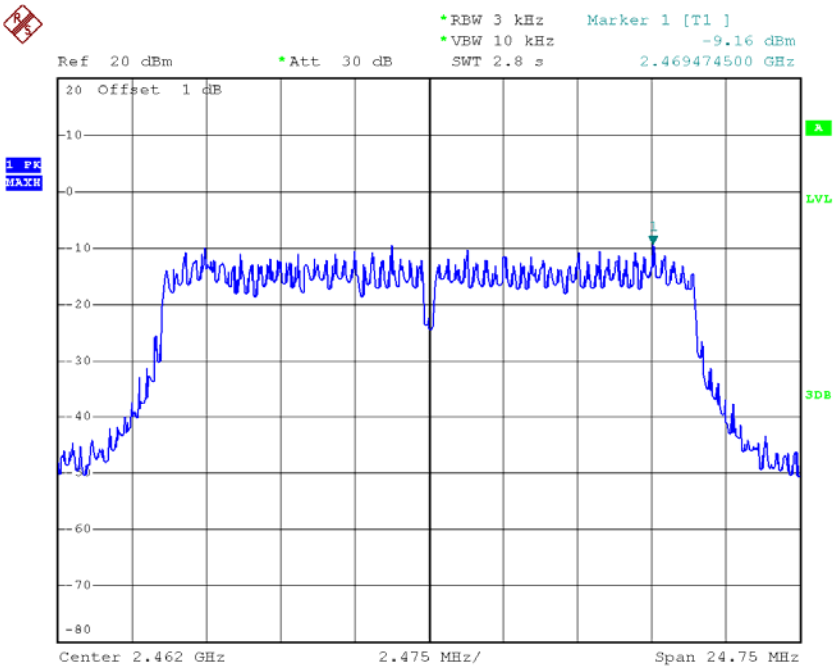


TX CH06



Date: 19.NOV.2013 04:49:12

TX CH11



Date: 19.NOV.2013 04:59:44

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 0+ANT 1		

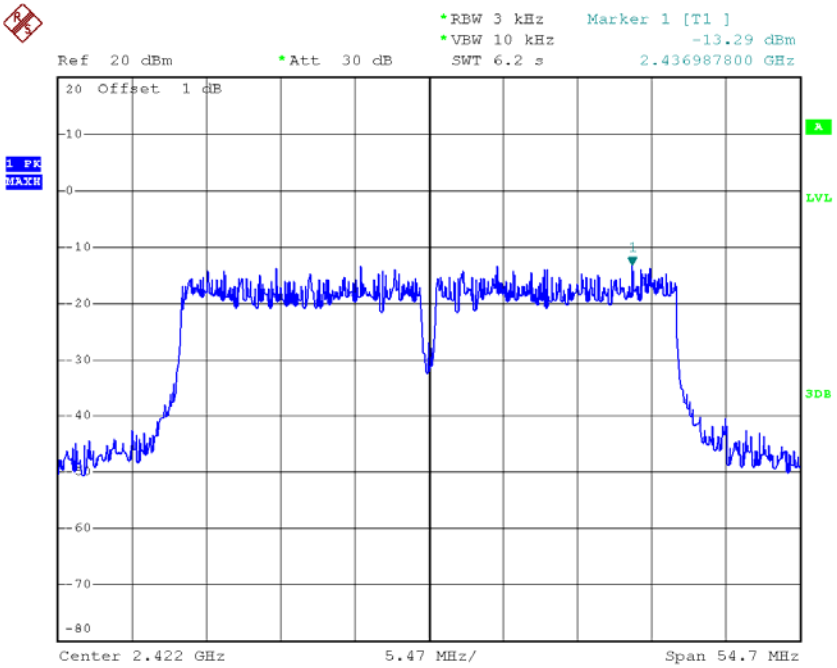
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-5.28	8
CH06	2437	-5.78	8
CH11	2462	-6.32	8

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

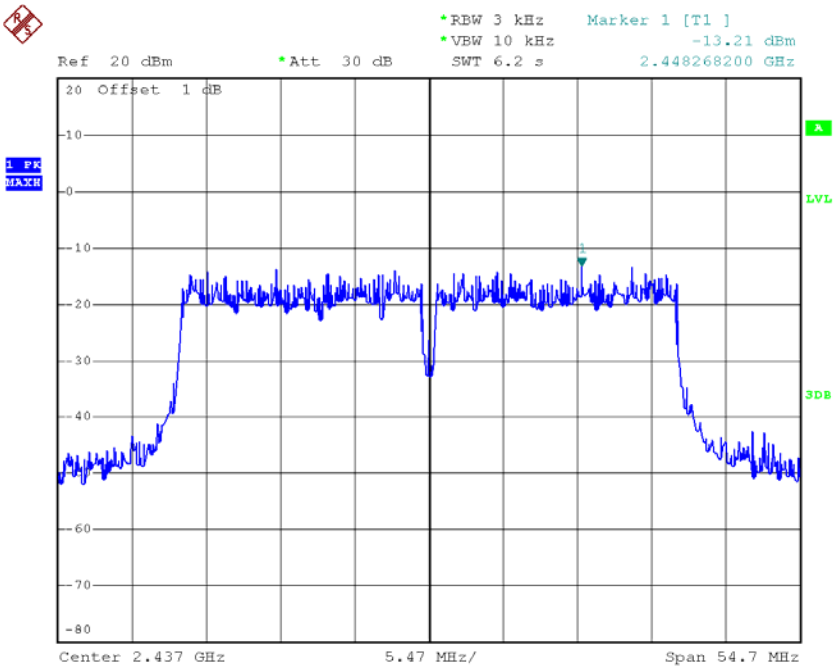
EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 0		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-13.29	8
CH06	2437	-13.21	8
CH09	2452	-13.92	8

TX CH03

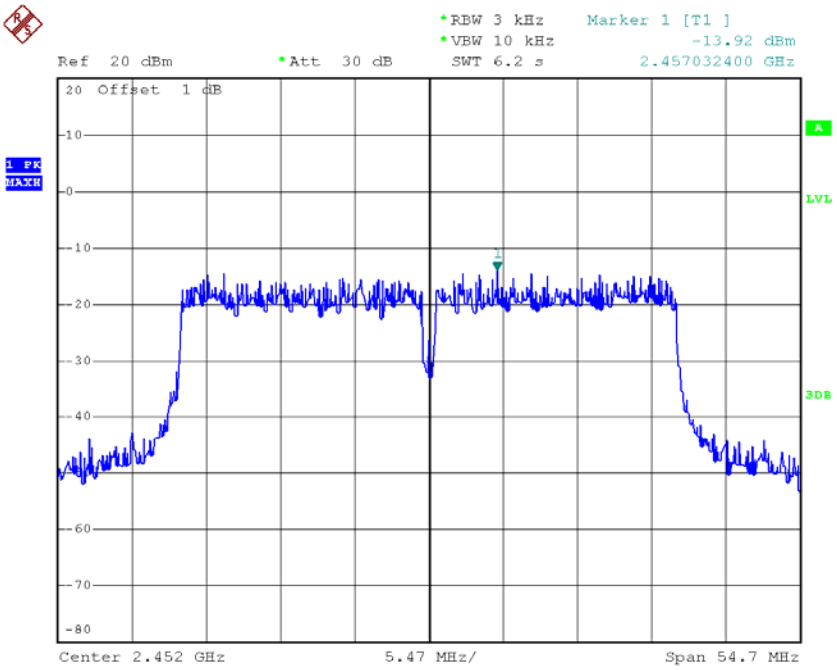


TX CH06



Date: 19.NOV.2013 05:33:29

TX CH09

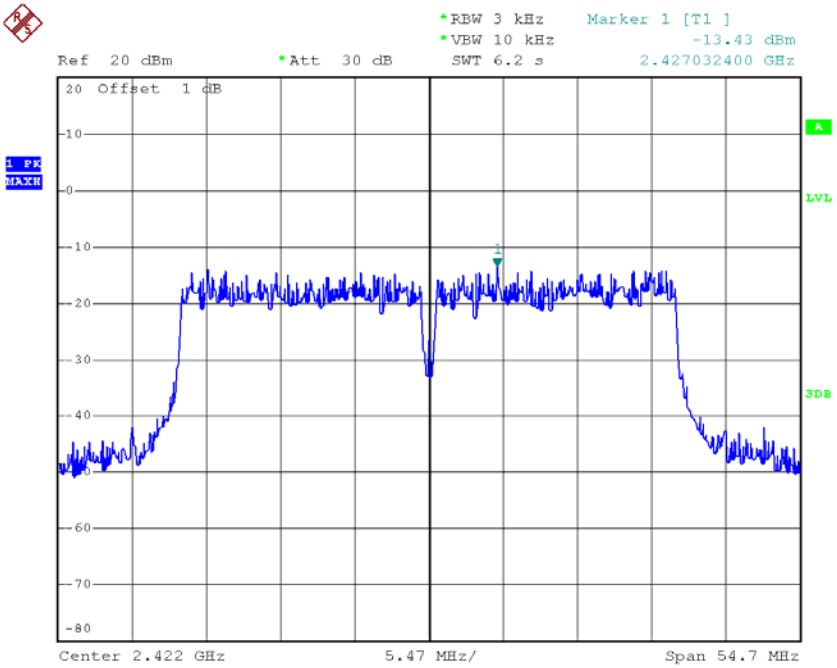


Date: 19.NOV.2013 05:41:54

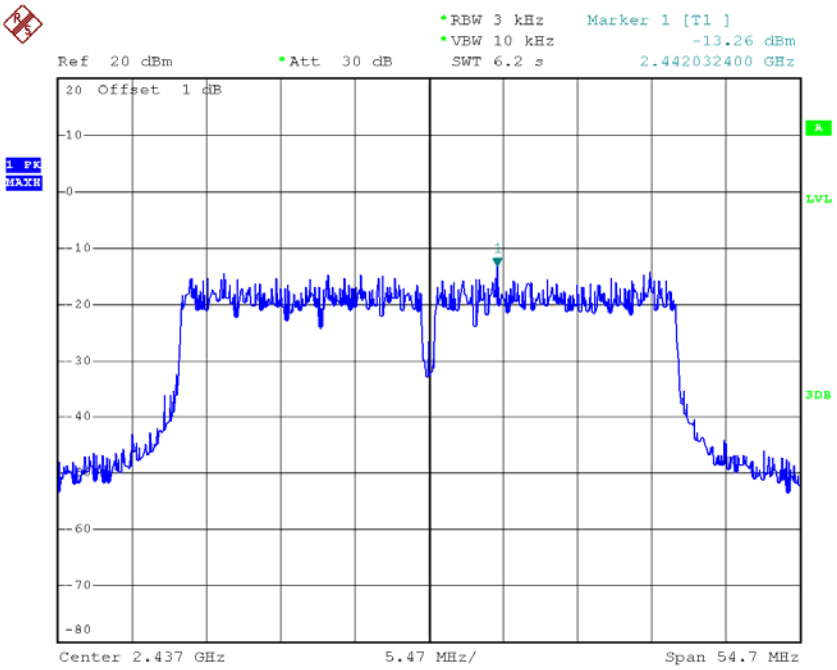
EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-13.43	8
CH06	2437	-13.26	8
CH09	2452	-13.75	8

TX CH03

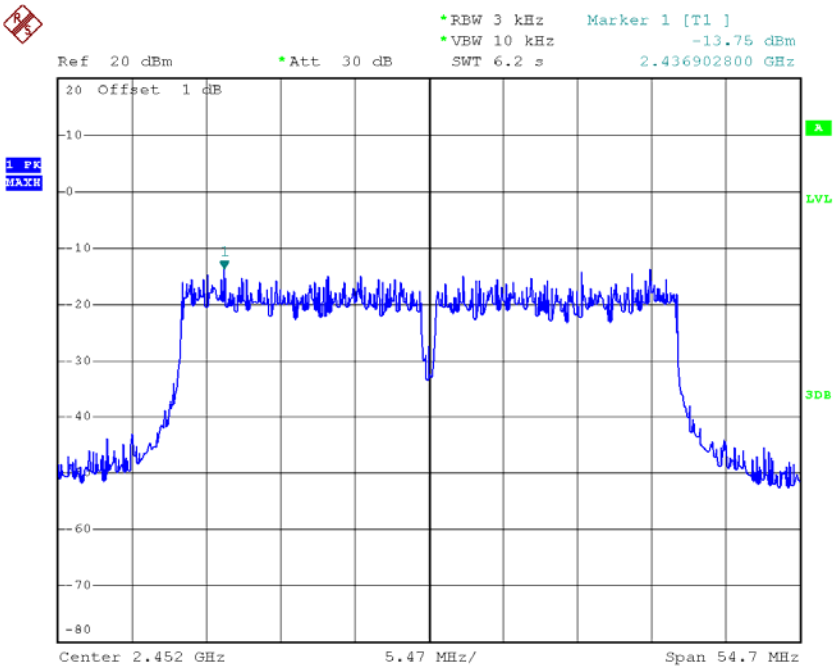


TX CH06



Date: 19.NOV.2013 05:33:55

TX CH09



Date: 19.NOV.2013 05:42:09

EUT:	Multi-mode WiFi Storage	Model Name :	Lenovo F800
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 0+ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-10.35	8
CH06	2437	-10.22	8
CH09	2452	-10.82	8

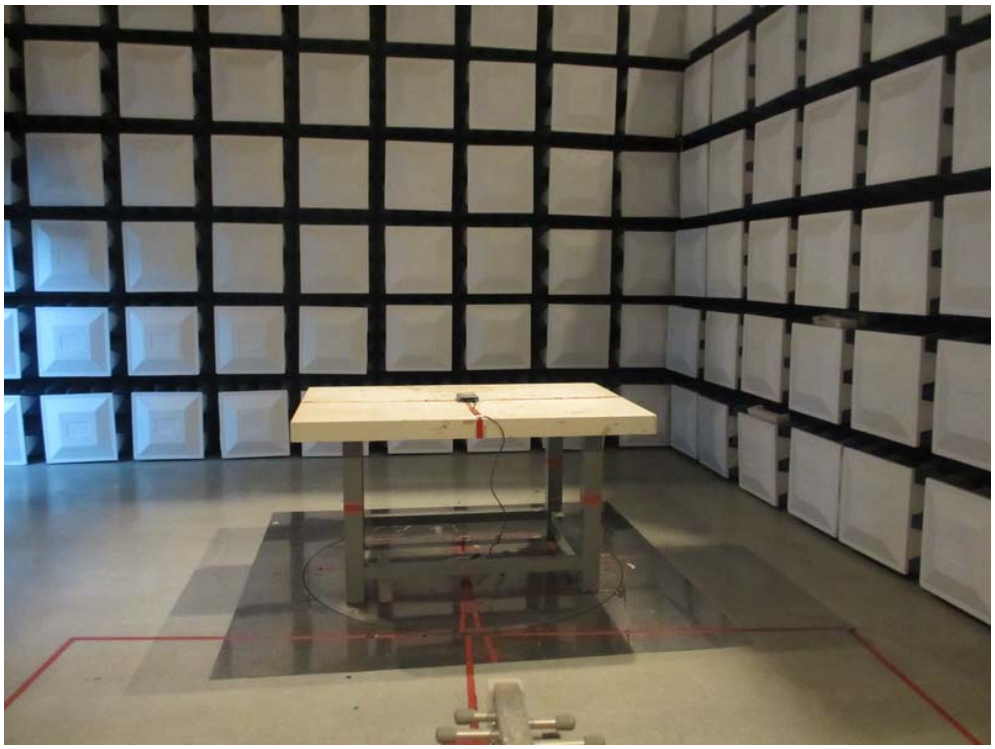
Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

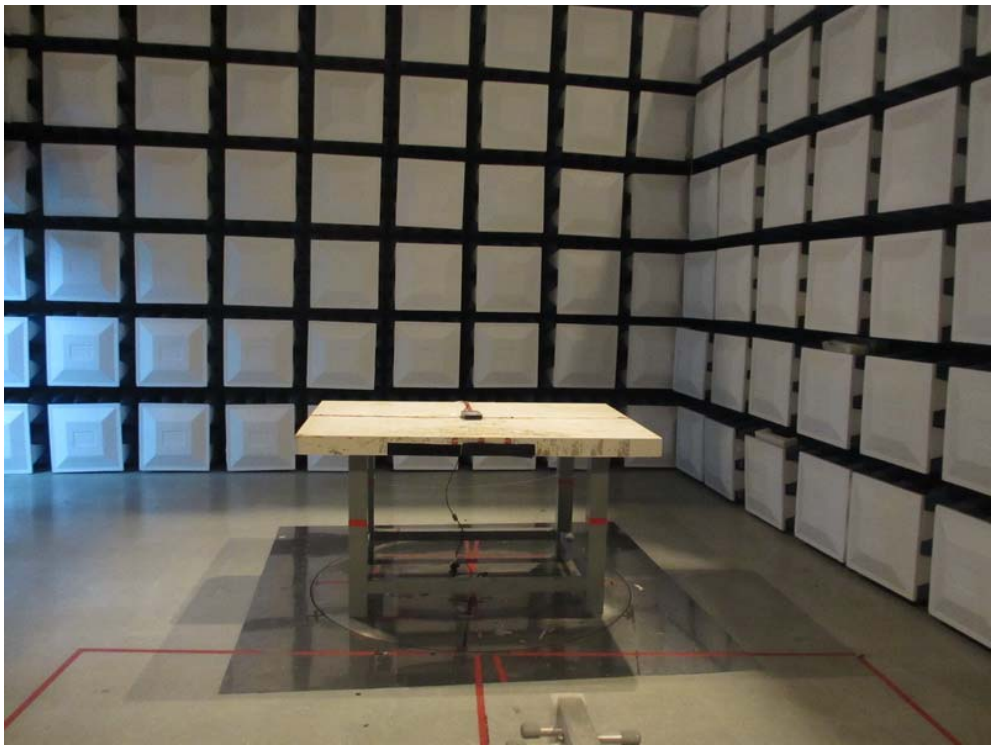
9. EUT TEST PHOTO

Conducted Measurement Photos

Radiated Measurement Photos
9KHz~30MHz

Radiated Measurement Photos
300MHz~1000MHz





Radiated Measurement Photos
Above 1000MHz